



2 0 1 6

Battery Management
Circuit Protection & Switches
Connectors & Insulators
Meters
Power Conversion
Power Distribution



The leading marine and mobile electrical companies have come together

For decades Ancor, BEP, Blue Sea Systems, Marinco, Mastervolt, and ProMariner have worked independently to lead the industry in innovative electrical solutions. Now the six companies have come together to offer the broadest and most complete electrical product offering for marine and mobile applications.

This catalog represents one of the six independent catalogs for each of the companies and includes their primary product focus.

ANCOR Marine Grade Tinned Wire, Terminals, and Wire Management Products

BEP Battery Management and Czone Digital Switching

BLUE SEA SYSTEMS Battery Management, Circuit Protection, and Panels

MARINCO AC Shore Power, DC Power Connection, and Accessories

MASTERVOLT High Amp Chargers, Inverters, and Power Conversion Products

ProMariner™ Waterproof and Open Chassis Battery Chargers

All of the company's products are designed to easily integrate into simple or comprehensive electrical systems. The world's finest boat, emergency vehicle, and RV manufacturers are recognizing the requirement for quality electrical systems and are specifying our products as original equipment.

The challenge, and our promise, is to leverage the deep product understanding in each of our companies with coordinated product development, an ABYC Certified technical sales team, and an industry-leading customer service and support group.



An ISO 9001: 2008 Certified Company



What makes Blue Sea Systems Different:

| Selection

Over 1,000 electrical products are designed to work together as a fully integrated system

| Fast Delivery

Just in time manufacturing in Bellingham, Washington ensures rapid order fulfillment

| Worldwide Access to Product

A distribution network in over 45 countries provides access to products when they are needed

| Information

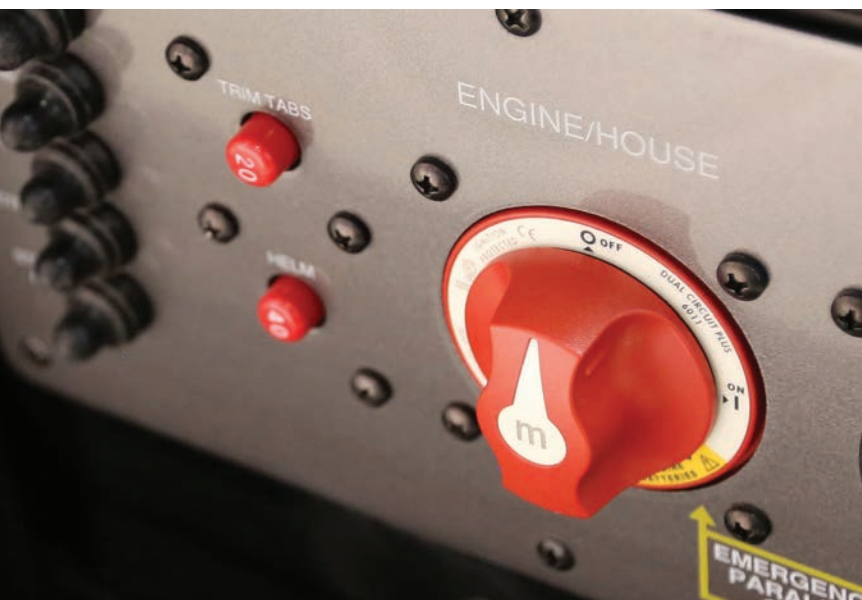
24-hour access to product information, selection tools, and technical articles online at blueseasystems.com

| Industry Standards

Industry involvement ensures products meet ABYC, NMMA, and Coast Guard standards

| Quality

As an ISO 9001:2008 certified company, product quality is managed in a manner consistent with international standards



NEW Products



12

BatteryLink® Chargers

7605 - North American, 7604 - European

Charge two batteries at or away from the dock. 3 Stage 10 Amp charger with integrated 65A Automatic Charging Relay. Includes LED charger remote.



37

Mini Add-A-Battery Plus Kits

A Complete Battery Management System

7655 - North American, 7654 - European

Charge two batteries at or away from the dock. Includes 3 Stage 10 Amp charger with integrated 65A Automatic Charging Relay and a Dual Circuit Plus™ Battery Switch. Includes LED charger remote.



13

BelowDeck™ Panel

12V Socket, 2.1 A Dual USB Charger, and Circuit Breaker
4353

The pre-wired BelowDeck™ Panel allows you to quickly install a DC charging center.



52

ST Blade Compact Fuse Blocks

5045 - 4 circuit, 5046 - 8 circuit

Compact common source ATO®/ATC® Fuse Blocks with screw termination.



14

4.8 Amp Dual USB Chargers

1039 - Switch Mount, 1045 - Socket Mount

Intelligent device detection charges your specific device rapidly. Reduced electronic interference. Over temperature protection.



128

Mini OLED DC Voltmeter

1733

Monitors DC voltage on a bright, waterproof, daylight readable OLED screen. Fits in same hole diameter as common 12V sockets.

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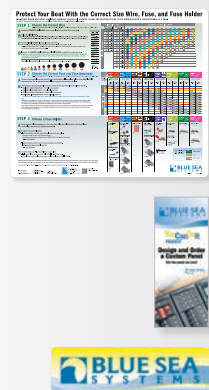
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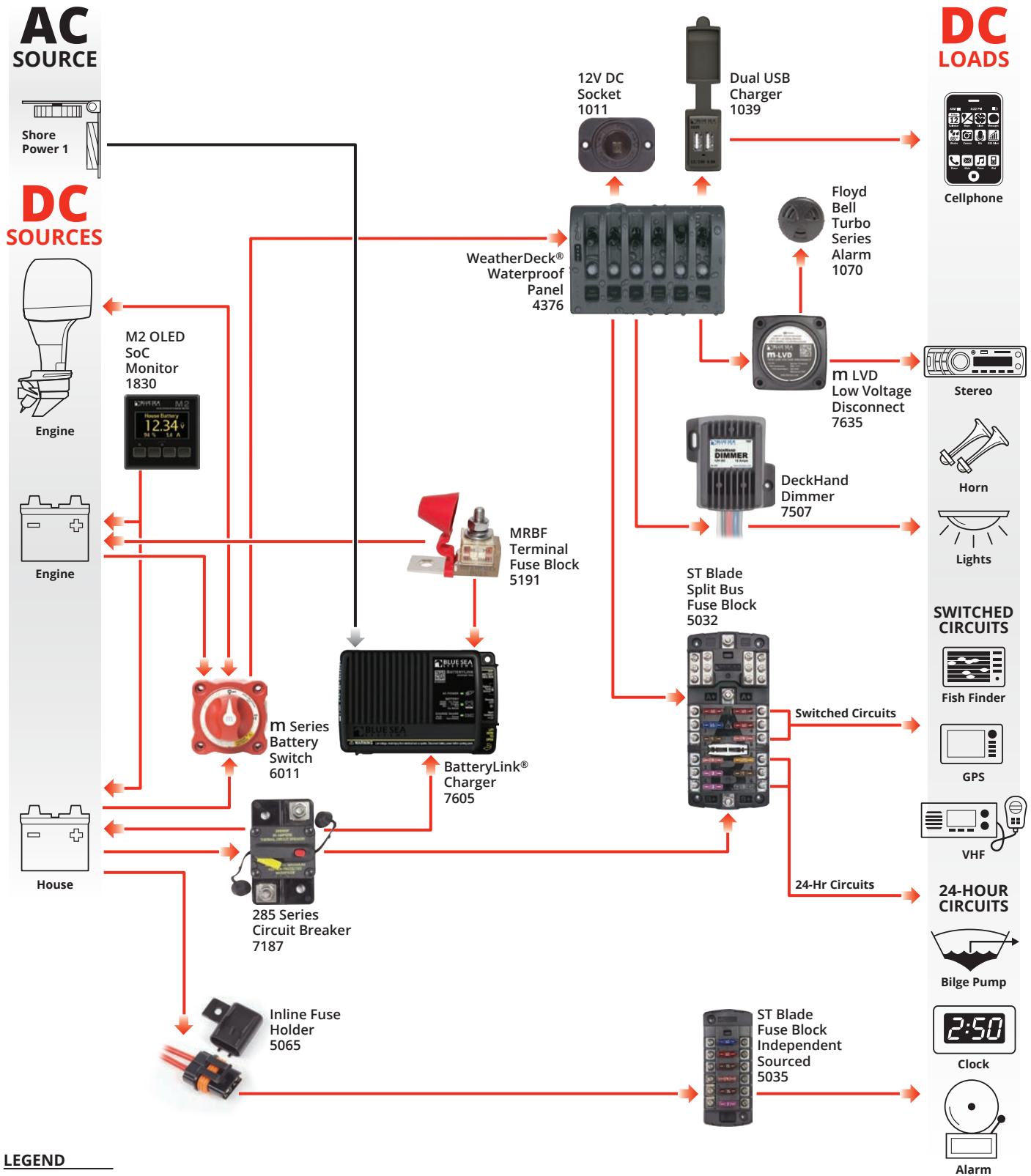
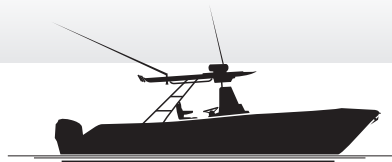
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Trailable Boat System

2 Battery Bank, 1 Engine

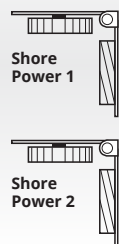


Yacht System

3 Battery Bank, 1 Engine



AC SOURCES



SMS Surface Mount System 3117

P12 LED Remote 7520



P12 Battery Charger 7522



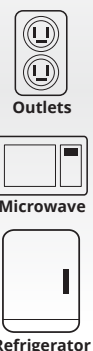
AC/DC 360 Custom Panel



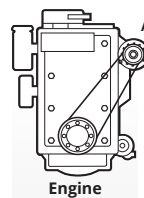
WeatherDeck® Waterproof Panel 4306



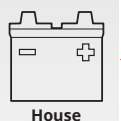
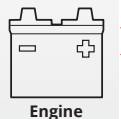
AC LOADS



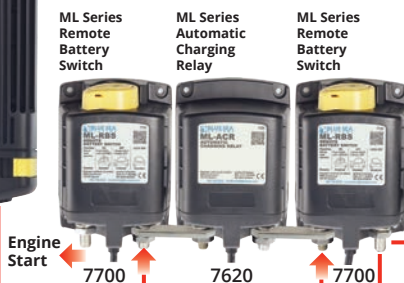
DC SOURCES



Alternator



Auxiliary



Engine Start

7700

7620

7700



SI ACR 7610

e Series Battery Switch 9004e



PowerBar 1000 1990



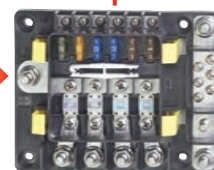
ST Blade Split Bus Fuse Block 5032



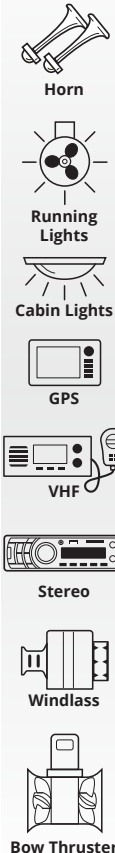
Switched Circuits

24-Hr Circuits

SafetyHub Fuse Block 7748



DC LOADS



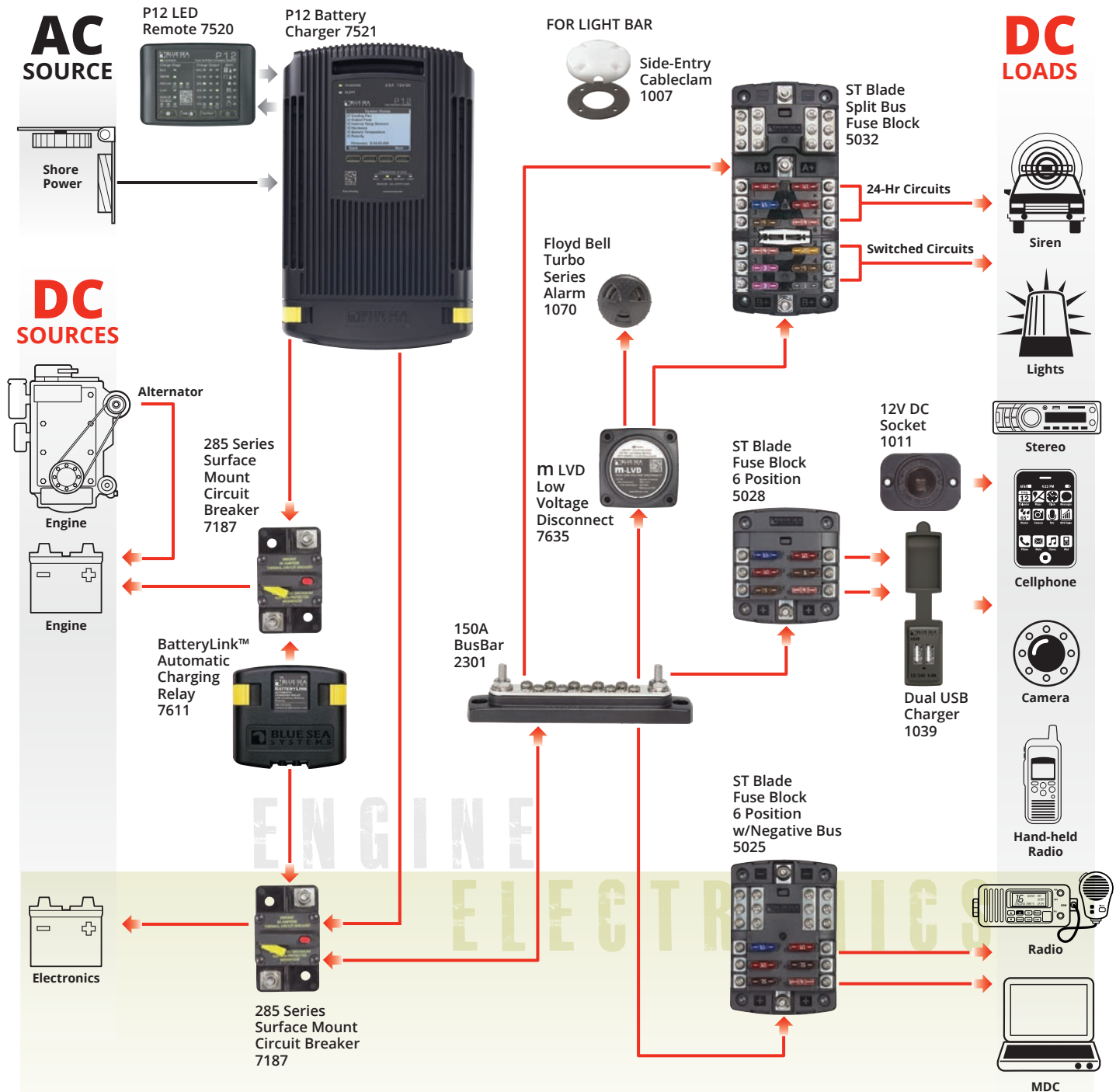
LEGEND

AC Current

DC Current

The diagram above is intended for reference only. Consult an electrical professional for system design and circuit protection.

Police Interceptor System 2 Battery Bank, 1 Engine



LEGEND

AC Current

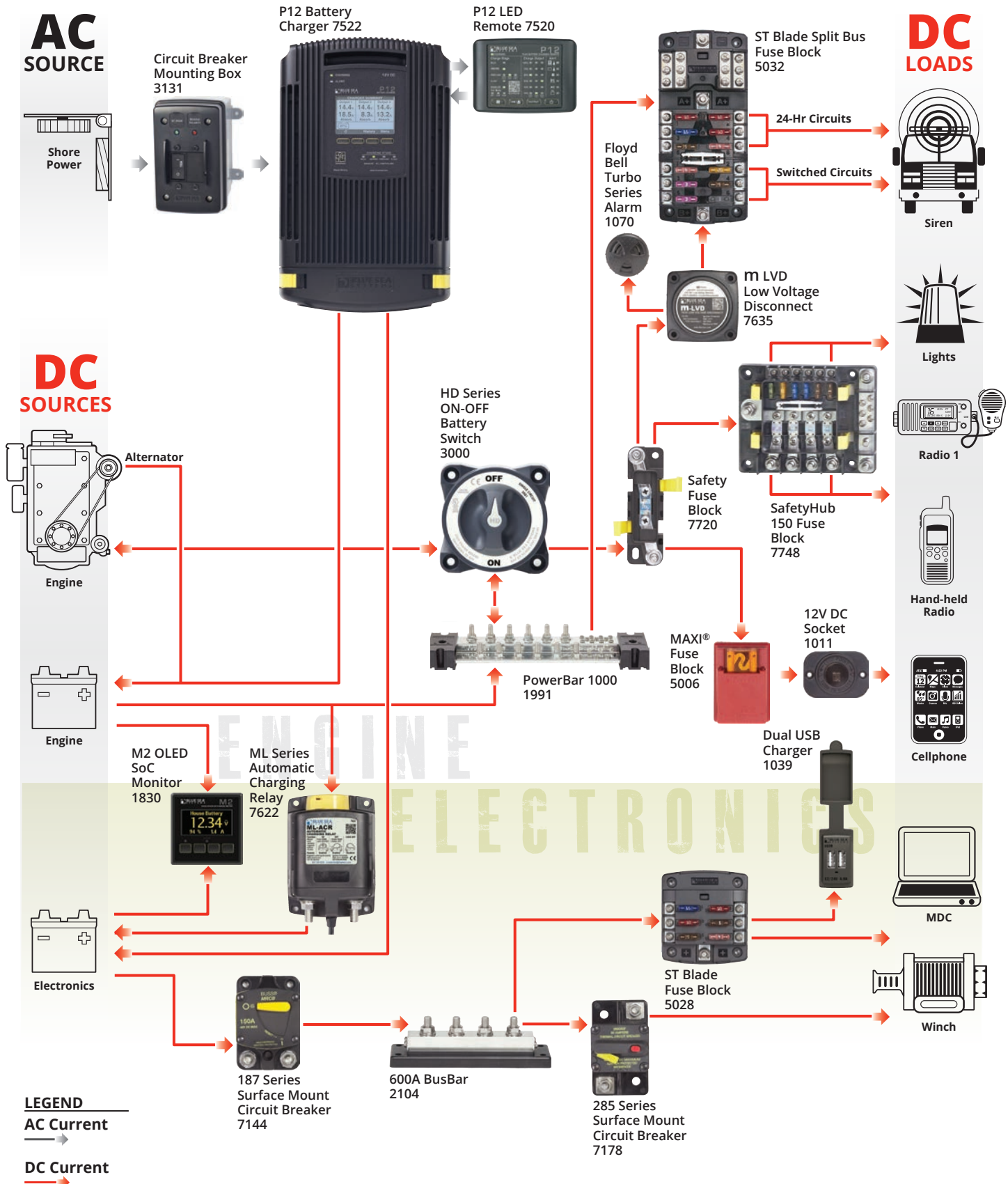
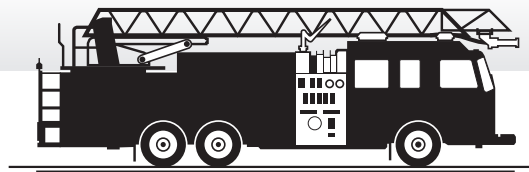


DC Current



The diagram above is intended for reference only. Consult an electrical professional for system design and circuit protection.

Fire Apparatus System 2 Battery Bank, 1 Engine



The diagram above is intended for reference only. Consult an electrical professional for system design and circuit protection.

POWER CONVERSION

Batteries are the heart of the electrical system and are often the single largest electrical expense.

Batteries are sensitive to failure and a shortened life if not charged properly. Modern battery chemistries – Gel, AGM, TPPL, Lithium Ion, and Flooded Lead Acid (FLA) – require adherence to manufacturers' charging recommendations. Following these recommendations requires a battery charger which is both rugged and sophisticated.

Battery manufacturers agree precise control of voltage, time, and temperature is critical.

Batteries may perform poorly and fail prematurely due to a charger's failure to properly manage these functions. A well designed battery charger will allow these variables to be correctly set for the requirements of each battery type and will manage them properly in the charging process.

These five critical functions are important features of a battery charger and rely on voltage, time, and temperature control to enable batteries to be charged according to battery manufacturers' recommendations.

1. User Defined Charge Profiles (Voltages)

Sets the charger's voltages to match battery manufacturer recommendations.

2. User Defined Absorption Stage Values

Determines when the charger should exit the Absorption Stage in order to prevent overcharging.

3. Charge Coordination

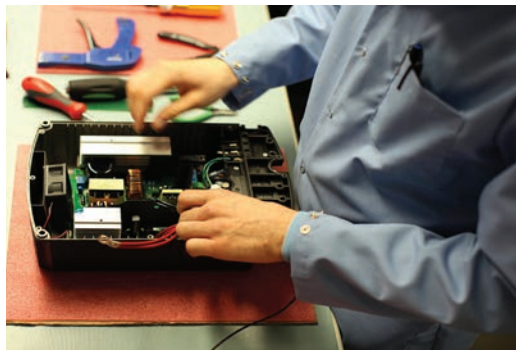
Ensures Automatic Charging Relays (ACR) are not operating in conflict with the charger. On shore power with a three bank charger, ACRs are not required as they are when away from the dock and one alternator must charge 3 battery banks.

4. PreFloat™ – a patented Blue Sea Systems P12 exclusive

Allows each battery on a P12 Battery Charger to exit the Absorption Stage when it is ready. Conventional chargers hold all three batteries in Absorption Stage until all three are ready to exit. This subjects 1 or 2 batteries to higher voltages than necessary while waiting for the 3rd battery to complete the Absorption Stage.

5. Battery Temperature Compensation

Adjusts charging voltage up (for colder batteries) or down (for warmer batteries) as recommended by battery manufacturers for proper battery performance. Temperature is determined by sensor placed directly on the battery.



POWER CONVERSION



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Blue Sea Systems **P12 Battery Chargers** are designed and tested, in the USA to perform in harsh conditions **aboard boats, emergency, specialty, and commercial vehicles.**

P12 Battery Chargers VIDEO ▶

The P12 Battery Charger is a four stage, three output, dry mount device designed for use in harsh environments where reliability, ease of use, and high performance are of primary importance. The P12 Battery Charger is designed and tested at Blue Sea Systems' company headquarters in Bellingham, Washington. The P12 Battery Charger was designed to meet these three core company philosophies:

1. Reliability

- Rugged, finned aluminum case
- Universal line voltage 90–265V AC, 50/60 Hz
- PreFloat™ stage prevents over charging by allowing each battery to end absorption stage individually
- Power factor corrected for efficient use of AC

2. Ease of use

- Intuitive diagnostic screens
- User selectable charge profiles for Lead Acid, Gel, AGM, TPPL, and customizable user settings
- Provides charging for up to three battery banks
- Large, bright display
- Multi-language: English, French, German, Italian, Spanish
- Charge coordination with Blue Sea Systems Automatic Charging Relays (ACR) controls ACR state ensuring proper float stage for each battery
- Temperature compensation

3. Support and Safety

- Factory technical support
- 5 year warranty
- Ignition protected
- AC over and under voltage shut down and automatic restart
- Over and under battery temperature protection
- DC over voltage and reverse polarity protection
- Surge and short circuit protection

Specifications

	7521	7522
Total Output Current	25A	40A
Input AC Current	4.5A @ 100V AC 2.25A @ 200V AC	7.5A @ 100V AC 3.75A @ 200V AC
Recommended Battery Bank Sizes*	60Ah Minimum Example: 1 × Group 24 330Ah Maximum Example: 3 × Group 31	60Ah Minimum Example: 1 × Group 24 440Ah Maximum Example: 4 × Group 31
Nominal Output Voltage	12V DC	12V DC
Output Connections	3 positive, 1 negative	3 positive, 1 negative
Universal AC Input Voltage	90V–265V AC	90V–265V AC
Input Frequency Range	45–65 Hz	45–65 Hz
Typical Float Voltage	13.5V DC	13.5V DC
Maximum Available Voltage	16.0V DC	16.0V DC
Output Voltage Accuracy	0.05V DC	0.05V DC
Operating Temperature	–20°C (–4°F) to 70°C (158°F)	–20°C (–4°F) to 70°C (158°F)
Storage Temperature	–30°C (–22°F) to 80°C (176°F)	–30°C (–22°F) to 80°C (176°F)
Warranty	5 Year	5 Year
Battery Types**	Flooded, Gel, AGM, TPPL	Flooded, Gel, AGM, TPPL

* Battery bank sizes are tested to California Energy Commission compliance (CEC). Larger and smaller size banks could charge well, but consume slightly more power over the charging cycle.

** Consult battery manufacturer specifications for other battery types to avoid damage. Do not mix battery types.

Regulatory

Designed and constructed for compliance to UL-1236 Marine, CSA 22.2 No. 107.2, and ABYC A-31 standards. Ignition Protection per ISO 8846, and SAE J1171. Meets FCC Part 15, Class B requirements. Designed and tested to comply with California Energy Commission (CEC) efficiency requirements, and ship with these settings by default. Ingress protection rated: IP32.

To view all regulatory specifications visit www.blueseas.com/P12.



PATENT PENDING

PN	Amps	Volts	Width in (mm)	Height in (mm)	Depth in (mm)
7521	25A	12V DC	8.46 (215)	13.00 (330.6)	3.66 (93)
7522	40A	12V DC	8.46 (215)	13.00 (330.6)	3.66 (93)

Related Products



SI ACR
p. 35

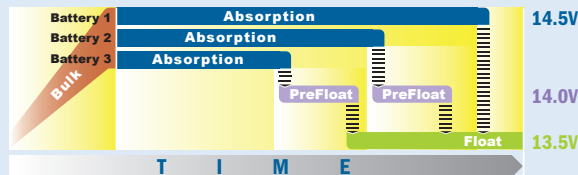


ML Series
Automatic Charging Relays
p. 39

TECH tip™

P12 Four Stage Battery Charging Explained

1. Bulk charges batteries to 75-80% of full charge.
2. Absorption slowly completes remaining charge.
3. PreFloat™ moves each battery individually from Absorption to PreFloat, based on the need of each battery. This prevents overcharging and damage to the batteries. Up to 0.5V difference between Absorption and PreFloat voltages can be achieved.
4. Float maintains battery charge.

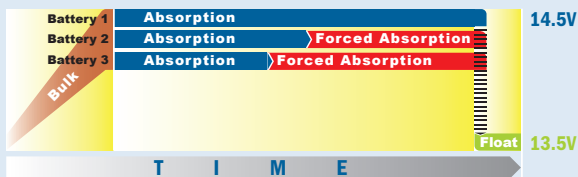


Example of Flooded Lead Acid Battery

Battery Equalization Mode: User selected battery equalizing provides advanced battery conditioning, revitalizing wet acid batteries.

Other Battery Chargers

Conventional battery chargers move all batteries from Absorption to the Float stage simultaneously with no ability to adjust for individual battery requirements.



Example of Flooded Lead Acid Battery

Forced Absorption: A period when batteries are potentially over charged.

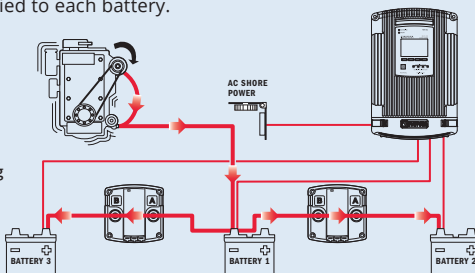
TECH tip™

Charge Coordination Explained

A boat's batteries typically spend less than 2% of their time being charged by the alternator. For the remaining 98% of the time they are being maintained by the AC battery charger. During this time, it is important that the proper charging stage of Bulk, Absorption, PreFloat, or Float be applied to each battery.

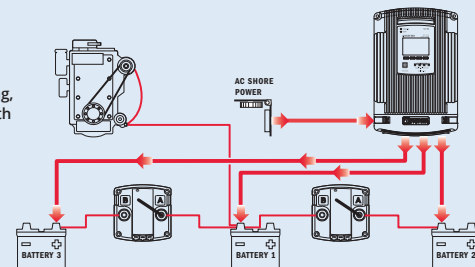
UNDERWAY

When engine is running and alternator is charging batteries, ACRs combine batteries, providing charge to each battery from the engine.



AT THE DOCK

When P12 Battery Charger is operating, communication with ACRs isolates batteries so the proper charge is applied to each battery.



P12 Battery Charger LED Remote

Indicates battery charger stage and alerts as well as controlling basic battery charger functions

LED Indicators

- Charging: Quick check for green light confirms charging
- Charge Stage: Displays charging stage including PreFloat for each battery
- Equalize: Indicates when the charger is in equalization mode
- Fan Mode: Indicates charger's internal fan mode
- Charge Output: Displays the percentage of output current for each battery. Will also indicate maximum output setting when maximum output is adjusted to accommodate for AC source limitations.
- Alert: Provides warning and alert status for quick diagnostics

Four Control Buttons

- Fan: User adjustable settings (OFF, LOW, or HIGH)
- Dim/ Alarm: Provides adjustment to brightness of LEDs on display as well as Silence function for alarms.
- Output: User adjustable charger output when AC source limitations exist that require lowering the AC current draw.
- Standby: Places P12 Battery Charger into standby mode

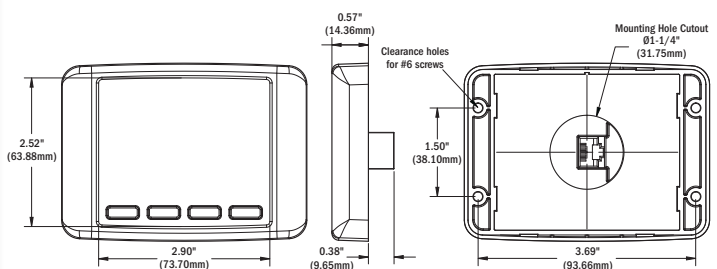


7520



1521

PN	Description	Volts	Width in (mm)	Height in (mm)	Depth in (mm)
7520	P12 Battery Charger LED Remote	12V DC	4.15 (105.46)	3.01 (76.56)	.95 (23.91)
1521	360 Panel P12 Battery Charger LED Remote	12V DC	4.88 (123.83)	4.75 (120.65)	.95 (23.91)



BatteryLink® Chargers **NEW**

Charge two batteries at or away from the dock with a 10A multistage battery charger and integrated 65A Automatic Charging Relay (ACR)

- **AC charging at the dock:** Use AC shore power to charge two isolated battery banks with the 3 Stage 10 Amp battery charger
- **DC charging away from the dock:** Share the DC power from the alternator with both the Start and the Auxiliary battery through the integrated 65A ACR
- Battery Temperature Compensation prolongs battery life
- Start isolation protects sensitive electronics from voltage sags and spikes
- Includes LED remote indicator for charge status at the helm
- Snap-on insulating cover
- One-piece stainless flange nuts ensure safe and secure connections

Specifications

Nominal Output Voltage	12V DC
Total Output Current	10A
Output Connections	2 positive, 1 negative
Universal AC Input Voltage	90V-265V AC
Input Frequency Range	50/60 Hz
Typical Float Voltage	13.5V DC
ACR Continuous Rating	65A
ACR Intermittent Rating (5 min.)	115A
ACR Combine Voltage (2 min.)	13.0V
ACR Combine Voltage (30 sec.)	13.5V
ACR Open Voltage (10 sec.)	12.35V
ACR Open Voltage (30 sec.)	12.75V
Operating Current (No AC Power, ACR Open)	10mA
Operating Current (No AC Power, ACR Closed)	60mA
Positive Cable Size (to meet current ratings)	6 AWG (16mm ²)
Negative Cable Size (to meet current ratings)	10 AWG (6mm ²)
Maximum Cable Size	1/0 AWG (50mm ²)
Terminal Stud Size	1/4"-20 (accepts M6 ring terminal)
Maximum Terminal Stud Torque	60 in-lb (6.8 Nm)
Quick Connect Terminal Size	1/4" x 0.032"
Warranty	5 Year
Battery Types	Flooded, AGM, TPPL
Maximum Battery CCA	850 CCA
Recommended Battery Bank Sizes*	60Ah Minimum, Example: 1 × Group 24 120Ah Maximum, Example: 2 × Group 24

* Battery bank sizes are tested to California Energy Commission compliance (CEC). Larger and smaller size banks could charge well, but consume slightly more power over the charging cycle.

Regulatory

Designed and constructed for compliance to UL-1236 Marine, CSA 22.2 No. 107.2, and ABYC A-31 standards. Ignition Protection per ISO 8846, and SAE J1171. Meets FCC Part 15, Class B requirements. IP67 - protected against immersion up to 1 meter for 30 minutes

Specifications subject to change. See bluesea.com for current information.

PN	Description	Plug Style
7605	BatteryLink® Charger	North American: NEMA 5-15P
7604	BatteryLink® Charger	European: CEE 7/7



7605

TECH tip™

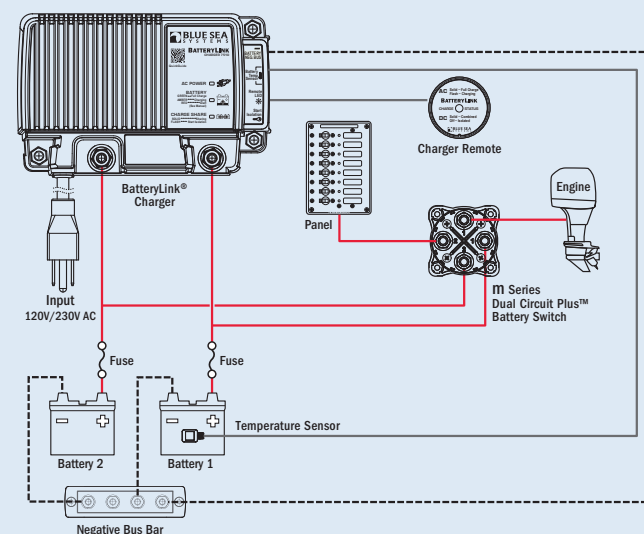
AC & DC Battery Charging Explained

AC Charging (At the Dock)

The BatteryLink® Charger works like a typical AC charger. When you plug in the AC cord, power is supplied allowing up to 10 amps of current to charge the connected batteries. Unlike a typical two bank charger, the BatteryLink® Charger will charge both batteries simultaneously through the integrated ACR. When AC power is present, the ACR will combine both batteries and the AC charger will charge them as one bank. For this reason the BatteryLink® Charger can only be used in 12V applications.

DC Charging (Away from the Dock)

The BatteryLink® Charger incorporates DC charging through an integrated 65A Automatic Charging Relay (ACR). An ACR uses a relay combined with a voltage sensing circuit. When a DC charge is being applied to either battery, and causes the voltage to rise above 13.0V, the relay closes and combines the two batteries to share the charge. When the charge is taken away or a load on the battery causes the voltage to drop below 12.75V, the relay will open, isolating the two batteries. This means that even when the BatteryLink® Charger is disconnected from AC power you can charge both your battery banks with an onboard DC charging source, like an engine alternator.



Related Products



M Series
Battery Switch
p. 18



Mini Add-A-Battery Plus Kits
p. 37

DeckHand™ Dimmers

Digitally controls dimming of non-regulated LED, incandescent, and halogen lights



7508

- Illuminated exit with adjustable time delay
- Supports multiple switch locations
- Memory for last dimmer setting
- Bulb saver prevents bulb aging while batteries are being charged
- Provides continuous voltage control from 0 to 100% of input voltage
- Offset mounting tabs allow dimmers to be mounted close together
- Retail package includes momentary (ON)-OFF-(ON) switch 8216 (p. 78)

Specifications

Maximum Parasitic Current <2mA
Temperature Rating -40°C to 85°C

Regulatory

CE marked

Meets ISO 8846 and SAE J1171 external ignition protection requirements

PN	Amps	Volts	Operating Range	Width in (mm)	Height in (mm)	Depth in (mm)
7506	6A	12V DC	9V-16V	3.23 (82.0)	3.47 (88.1)	1.30 (33.0)
7504	6A	24V DC	18V-32V	3.23 (82.0)	3.47 (88.1)	1.30 (33.0)
7507	12A	12V DC	9V-16V	3.23 (82.0)	3.47 (88.1)	1.30 (33.0)
7509	12A	24V DC	18V-32V	3.23 (82.0)	3.47 (88.1)	1.30 (33.0)
7508	25A	12V DC	9V-16V	3.23 (82.0)	3.47 (88.1)	1.30 (33.0)

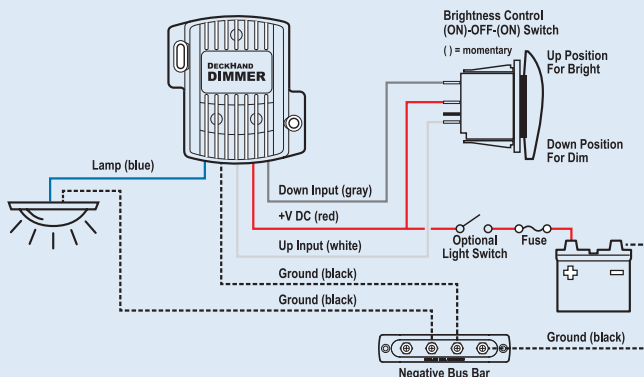
TECH tip™

Illuminated Exit Explained

The illuminated exit feature allows boaters to safely disembark before the lights automatically turn off. Using the illuminated exit feature:

One minute delay: Hold the switch in up position for 2 seconds, lights will flash. Release switch after first flash and the lights will remain on for 1 minute.

Two to five minute delay: Hold the switch in up position for 1-4 seconds after the first flash. Release the switch after 2 to 5 flashes. The lights will remain on for 1 minute for each flash up to a maximum of 5 minutes.



BelowDeck™ Panel NEW

12V Socket, Dual USB Charger, and Circuit Breaker
Compact easy to install DC charging center.

The integrated circuit breaker switch provides circuit protection and offers the ability to shut off the panel, preventing parasitic draw.

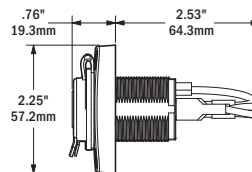
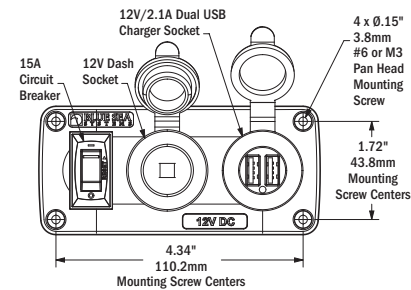
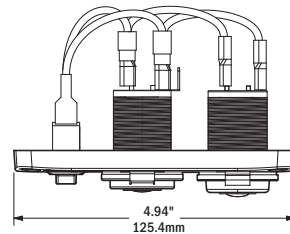


4353

- 2.1A Dual USB Charger 1016 (p. 14) and 12V Socket 1011 (p. 15)
- Illuminated Carling Technologies™ 15A circuit breaker switch
- Pre-wired harness
- Polycarbonate/ABS panel face is UV-stabilized, flame retardant, and will not corrode
- Simple two-wire installation

PN Description

4353 BelowDeck™ Panel



Related Products



2.1A Dual USB
Chargers
p. 14



4.8A Dual USB
Chargers
p. 14



12V Socket
p. 15

2.1A Dual USB Chargers

Charge two mobile devices on the go



1016, 1018

1016200

- Install in existing 12V DC socket hole providing access for charging mobile devices
- Compatible with popular mobile devices
- Conformal coated circuit board for the harsh marine environment
- Protective dust cap keeps debris and moisture out

Specifications

Maximum Output Current	2.1A DC (total)
Output Voltage	5V DC $\pm 5\%$
Port Configuration	D +=2.0V, D-=2.8V
Parasitic Current Draw	15mA
Thermal Overload Protection	Yes
Short Circuit Protection	Yes
Reverse Polarity Protection	Yes
USB	2.0, Type A
Cutout Dimensions in (mm)	1-1/8" (29 mm) diameter

Regulatory

RoHS, CE Certified

PN	Input Voltage	Input Voltage Range	Description
1016	12V DC	9V-16V DC	Socket Mount Charger
1016200	12V DC	9V-16V DC	Socket Mount Charger
1018	12V / 24V DC	9V-32V DC	Socket Mount Charger

USB Extension

Control a stereo or other device remotely from a phone or tablet in the cockpit. USB 2.0 data/voltage port easily mounts at the dash with a prewired connecting cable that conveniently plugs directly into the USB on the stereo.

- Protective dust cap with tether keeps out dust and spray

Specifications

Cable Length	5 ft (1.524M)
Cutout Dimensions in (mm)	1045 - 1-1/8" (29 mm) diameter
USB	2.0, Type A

Regulatory

IP66 - protected against powerful water jets



1044

PN	Description
1044	12V DC USB

4.8A Dual USB Chargers NEW

Intelligent device recognition allows rapid charging of phones, tablets, or other mobile devices



1039

1045

- Charges at the speed required by specific devices
- Internal filtering for reduced electronic interference
- Over temperature protection
- Protective dust cap keeps debris and moisture out
- Conformal coated circuit board for the harsh marine environment
- 1039 Mounts in an existing contura switch aperature (p. 98)
- 1045 Mounts in a common 1-1/8" hole

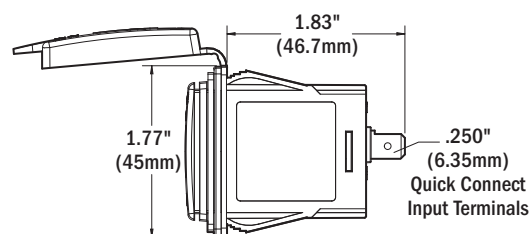
Specifications

Maximum Output Current	4.8A DC (total)
Output Voltage	5V DC $\pm 5\%$
Port Configuration	Intelligent Device Recognition
Parasitic Current Draw	1mA
Thermal Overload Protection	Yes
Short Circuit Protection	Yes
Reverse Polarity Protection	Yes
USB	2.0, Type A
Cutout Dimensions in (mm)	1039 - 1.45" \times 0.83" (36.83 mm \times 21.08 mm)
	1045 - 1-1/8" (29 mm) diameter

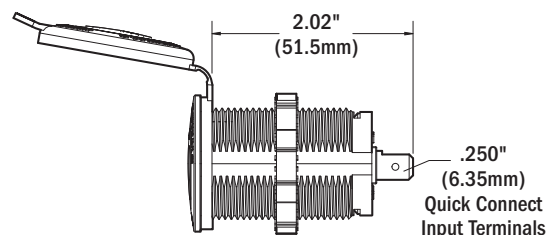
Regulatory

RoHS, CE Certified

PN	Input Voltage	Input Voltage Range	Description
1039	12V / 24V DC	9V-32V DC	4.8A Switch Mount Charger
1045	12V / 24V DC	9V-32V DC	4.8A Socket Mount Charger



Side View



Side View

12 Volt Socket and Plugs

Designed to withstand the rigors of wet environments and constant vibration

- Corrosion resistant materials
- Twist lock system - plug locks securely into socket
- Internal strain relief and cord seal
- Nickel plated copper alloy used for all current carrying components
- Plug has a sealing ring to keep out spray and make it seat firmly in the socket
- Socket features a protective dust cap that keeps debris and moisture out
- 1012 and 1013 heavy duty 18 gauge wire
- 1012 cord reaches up to 6 feet

Specifications

Voltage Nominal	12V DC
Amperage Max. Operating	15A DC (socket)
Amperage Max. Operating	10A DC (plug)
Cutout Dimensions in (mm)	1-1/8" (29 mm) diameter (socket)

PN	Description	Dust Cap
1010	Plug	--
1011	Black Socket	Yes
1011200	White Socket	Yes
1012	Single Plug with Single Socket Extension	Yes
1013	Single Plug with Dual Socket Extensions	Yes
1014	Mounting Bracket for Sockets	--
1015	Plug and Socket Set - Includes 1010 and 1011	Yes



1010



1014



1011



1011200



1013



1012

12V DC Socket and Dual USB Charger Panels

Integrates DC Sockets and USB Charger with 360 Panel System



1472



1478

PN	Description	Width in (mm)	Height in (mm)	Depth in (mm)
1472	2 × 1011	4.88 (123.83)	4.75 (120.65)	1.50 (38.10)
1478	1 × 1011, 1 × 1016	4.88 (123.83)	4.75 (120.65)	1.50 (38.10)

BATTERY MANAGEMENT

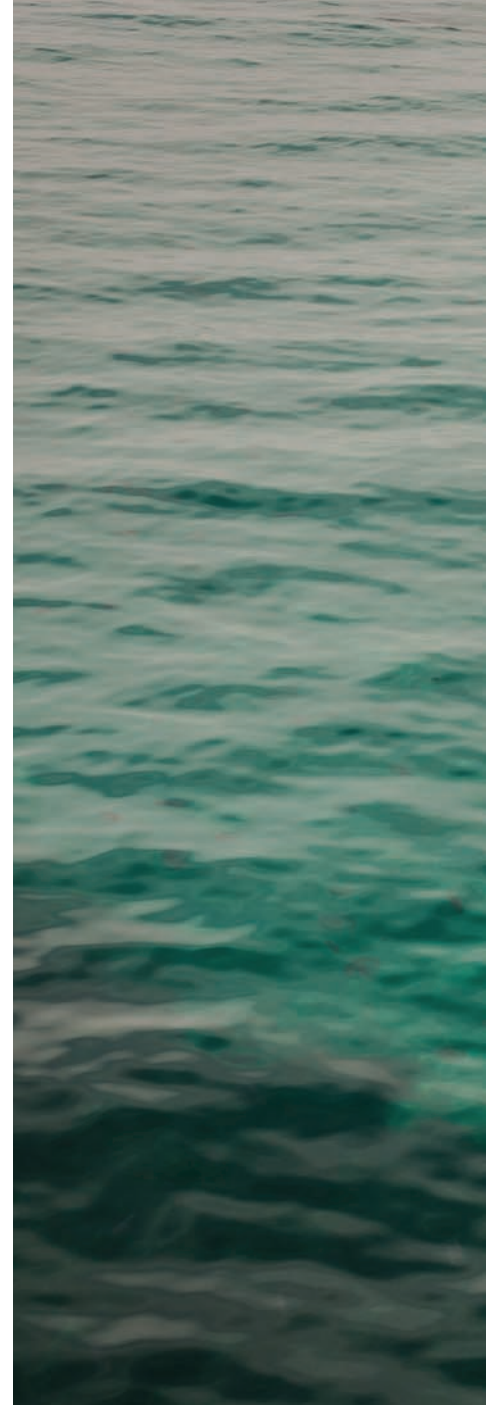
Battery management is central to the safe operation of a boat or vehicle

All boats and vehicles with an engine have at least one battery whose primary purpose is starting the engine and providing power for loads such as lights, pumps, and electronics. The safe switching between batteries, loads, and charge sources is achieved using products in this section:

1. **Manual Battery Switches** are commonly used on small boats or vehicles where the batteries are located near the operator, allowing the high amperage switching and the control of the switch to be the same location. On large boats or vehicles, battery switches may be mounted close to the batteries to avoid long cable runs. This lack of operator access can create a dangerous situation in the event of a fire in the engine room when the battery switch must be turned off.
2. **Remote Battery Switches (RBS)** are ideal when there is not an easily accessible location near the batteries to mount the battery switch, requiring either a long cable run or a battery switch mounted in a difficult to access location. An introduction to Remote Battery Switches is on page 29.
3. **Low Voltage Disconnects (LVD)** sense low battery voltage and disconnects non-critical loads to save power for engine starting. A full description and specification of the M LVD is on page 28.
4. **Automatic Charging Relays (ACR)** automatically combine two battery banks during charging and isolates batteries when discharging and optionally when starting the engine. Read the TECH Tip explaining how ACRs work on page 32. Use the ACR Selection Chart on page 33 to choose the right ACR for your application.

Considerations when choosing a battery switch

1. **Requirement:** ABYC/USCG requires a battery switch on every boat with a battery over 800 Cold Cranking Amps (CCA). This requirement exists so the potentially destructive energy in the batteries can be isolated in the event of a fire. A battery switch is also used in many vehicle applications when high capacity storage batteries are used for purposes other than starting an engine.
2. **Proper Location:** The United States Coast Guard (USCG) and ABYC recommends that a battery switch be mounted as close to the battery as possible to reduce voltage drop and long runs of heavy and expensive battery cables and in a location that can be easily accessed in the event of a fire.
3. **Proper Size:** Read the TECH Tip, "Selecting a Battery Switch".
4. **Battery Switch Functions:** To see manual battery switch operational diagrams go to page 24–25.



BATTERY MANAGEMENT

Manual Battery Switches | 18-25

Battery Management Panels | 26

Solenoid Switches | 27, 40

Low Voltage Disconnect | 28, 41

Remote Battery Switches | 29-31, 40

Automatic Charging Relays | 34-41

Add-A-Battery Kits | 36-37



Boston Whaler relies on Blue Sea Systems **Automatic Charging Relays**
and Remote Battery Switches for Battery Management
aboard their award-winning 350 Outrage.

M Series Battery Switches

300 Amps continuous rating for outboards and small gasoline or diesel engines

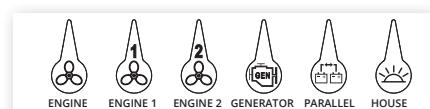
- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Studs accept 3/8" (M10) ring terminals
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Blue Sea Systems one-piece terminal stud design never loosens over time
- One-piece stainless flange nuts ensure safe and secure connections
- Isolating cover with three snap-in side pieces protects rear contacts and allows wire access in any direction
- 6 Circuit label set included (not included with 6005 and 6005200)
- Icon Circuit Identification Label Kit available 7902 - sold separately (p. 138)

Specifications

	6005, 6006 6005200 6006200	6007 6007200	6010, 6011 6010200 6011200
Cranking Rating: 30 sec.	900A	900A	675A per circuit
Intermittent Rating: 5 min.	500A	500A	450A per circuit
Continuous Rating	300A	300A	300A per circuit
Voltage Max. Operating	48V DC	32V DC	32V DC

Regulatory

CE marked, ISO 8846, UL Listed - UL 1107 electric power switches
Meets American Boat and Yacht Council (ABYC) requirements
Meets UL 1500 and SAE J1171 external ignition protection requirements
IP66 - protected against powerful water jets (see inside back cover)



6 Circuit Label Set Included (not included with PN 6005 and 6005200)

PN	Description	Color
6005	Single Circuit ON-OFF with Key	Red
6005200	Single Circuit ON-OFF with Key	Black
6006	Single Circuit ON-OFF	Red
6006200	Single Circuit ON-OFF	Black
6007	Selector 4 Position	Red
6007200	Selector 4 Position	Black
6010	Dual Circuit™	Red
6010200	Dual Circuit™	Black
6011	Dual Circuit Plus™	Red
6011200	Dual Circuit Plus™	Black
7900	Removable key	Red
7900200	Removable key	Black
7901	Removable knob	Red
7901200	Removable knob	Black
9159	Paralleling link bus (2 pack)	-
1139	360 Panel Battery Switch Module	-

Mounting Options



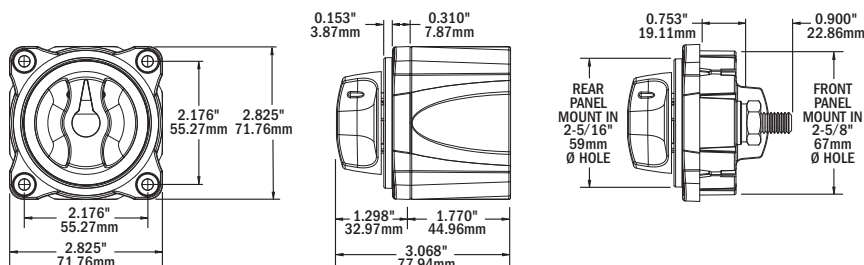
Rear



Front



Surface



For the full list of specifications and operation diagrams see pages 24-25

Related Products



Paralleling Link Bus
1139 see table



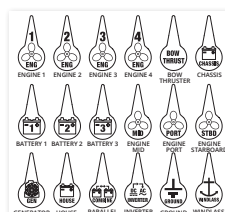
M LVD
p. 28



M ACR
p. 34



Mini Add-A-Battery
p. 36



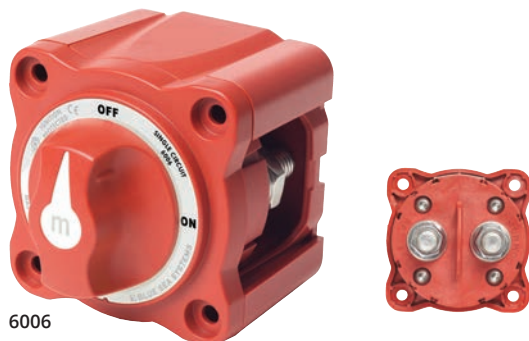
Circuit Identification
Label Kit
p. 138

Single Circuit ON-OFF

Switches a single battery to a single load group



6005



6006

Selector 4 Position

Switches isolated battery banks to all loads or combines battery banks to all loads



6007

m Series Battery Switch Mounting Panel

1139 (switch sold separately)

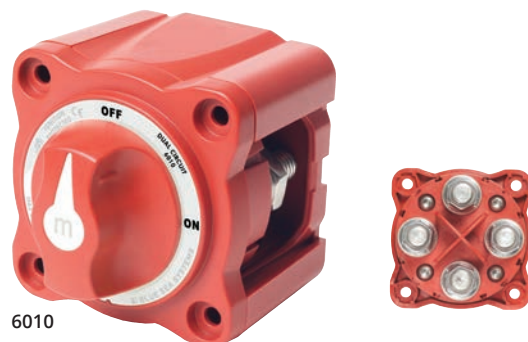
Dimensions (WxH):

4.88 × 4.75 in (123.83 × 120.65 mm)

- 360 Panel System
- Accepts the m Series Battery Switch, m ACR, or m LVD

Dual Circuit™

Simultaneously switches two isolated battery banks or circuits. May be used to switch the positive and negative conductors for required applications.



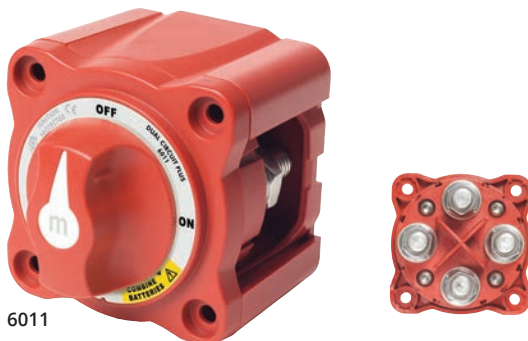
6010

WARNING

The positive and negative conductors should not be attached to the same battery switch. The only exceptions are the Dual Circuit™ Battery Switches, 6010 and 5510. Since these models have electrically isolated circuits and do not include a combine feature, they can provide disconnect to the positive and negative conductors simultaneously.

Dual Circuit Plus™

Simultaneously switches two isolated battery banks or combines battery banks to all loads. CAN NOT be used to switch positive and negative conductors because of the combine feature.



6011

TECH tip™**Dual Circuit Plus™ Explained**

The Dual Circuit Plus™ is recommended when:

- Ease of use is desired
- Battery bank selection is not necessary
- Using sensitive electronics
- Paired with an Automatic Charging Relay (ACR)

The Dual Circuit Plus™ is a double pole switch designed to supply power to the devices that are connected to a specific battery bank. This means house electronics are isolated from the engine bank. This both preserves the starting battery and prevents sensitive electronics from being subjected to voltage sags and spikes during starting. Designed to be coupled with an Automatic Charging Relay (ACR) to provide simultaneous charging of two battery banks from the engine's alternator. Below is a recommendation on how to properly use the Dual Circuit Plus™ Battery Switch when paired with an ACR.

1. Power is Needed - Turn the switch into the ON position.
2. No Power Needed (Storage) - Select OFF to prevent current draw.
3. Emergency Parallel (Jump Starting) - Turn the switch to the Combine Batteries position designated in yellow. Once the engine is running, turn the switch to the ON position.

e Series Battery Switches

350 Amps continuous rating for inboard gasoline or diesel engines

Features

- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Accepts up to 4/0 AWG (120 mm²) battery cables
- Studs accept 3/8" (M10) ring terminals
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Blue Sea Systems one-piece terminal stud design never loosens over time
- One-piece stainless flange nuts ensure safe and secure connections
- Fits most standard Perko and Guest battery switch hole patterns
- Tactile indicator conveys knob position by feel
- Icon Circuit Identification Label Kit available 7902 - sold separately (p. 138)

Specifications

	9003e	9001e	5510e
	9004e	9002e	5511e
		11001	
Cranking Rating: 30 sec.	1,200A	1,200A	700A per circuit
Intermittent Rating: 5 min.	600A	600A	525A per circuit
Continuous Rating	350A	350A	350A per circuit
Voltage Max. Operating	48V DC	32V DC	32V DC

Regulatory

CE marked, ISO 8846, UL Listed - UL 1107 electric power switches

Meets American Boat and Yacht Council (ABYC) requirements

Meets UL 1500 and SAE J1171 external ignition protection requirements

IP66 - protected against powerful water jets (see inside back cover)

PN	Description	AFD*
5510e	Dual Circuit™	--
5511e	Dual Circuit Plus™	--
9001e	Selector 4 Position	--
9002e	Selector 4 Position	Yes
9003e	Single Circuit ON-OFF	--
9004e	Single Circuit ON-OFF	Yes
11001	Selector 3 Position	Yes

* Includes Alternator Field Disconnect (AFD) which protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

Mounting Options

Rear

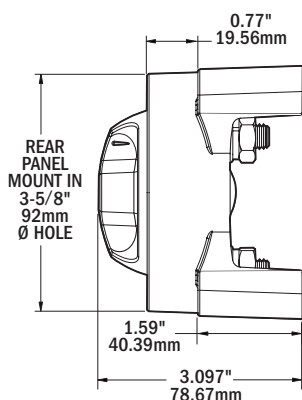
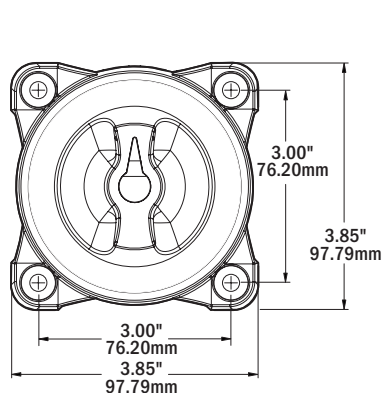


Front



For the full list of specifications and operation diagrams see pages 24-25

For the wiring schematics for typical applications see pages 146-147



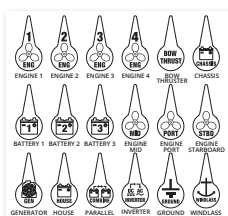
Related Products



SI ACR
p. 35



Add-A-Battery
p. 36



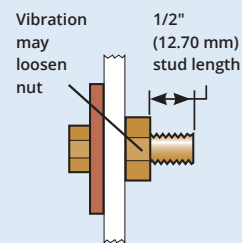
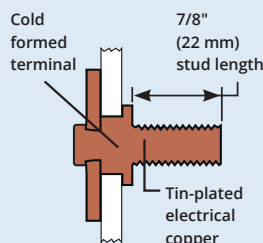
Circuit Identification
Label Kit
p. 138

TECH tip™

One Piece Stud Explained

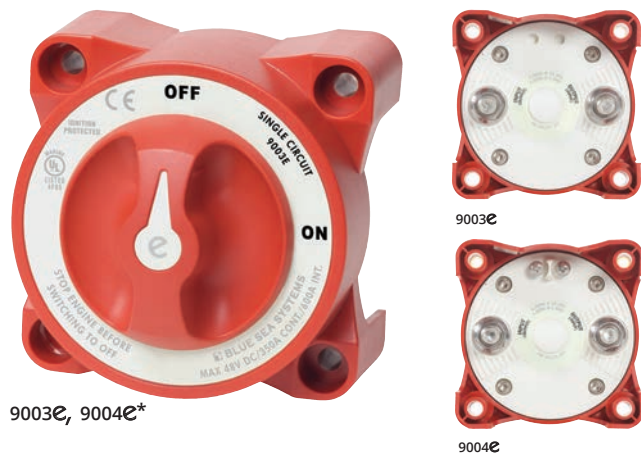
Blue Sea Systems
ONE PIECE STUD
Can never loosen over time

Competitors
TWO PIECE STUD
Can loosen and create
a poor connection



Single Circuit ON-OFF

Switches a single battery to a single load group



9003e, 9004e*

Selector 3 Position

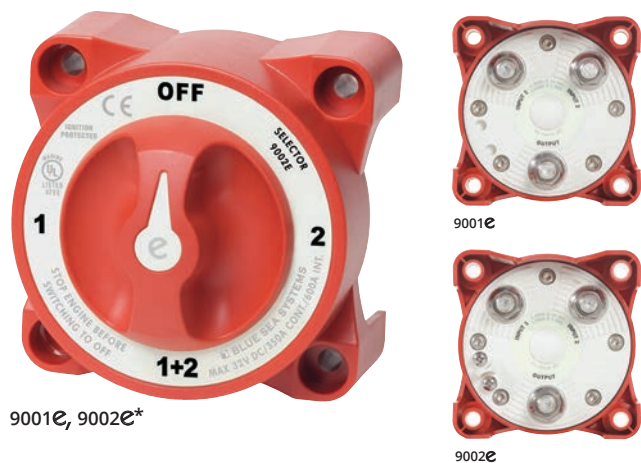
Switches isolated battery banks to all loads



11001*

Selector 4 Position

Switches isolated battery banks to all loads or combines battery banks to all loads



9001e, 9002e*

Dual Circuit™

Simultaneously switches two isolated battery banks or circuits. May be used to switch the positive and negative conductors for required applications.



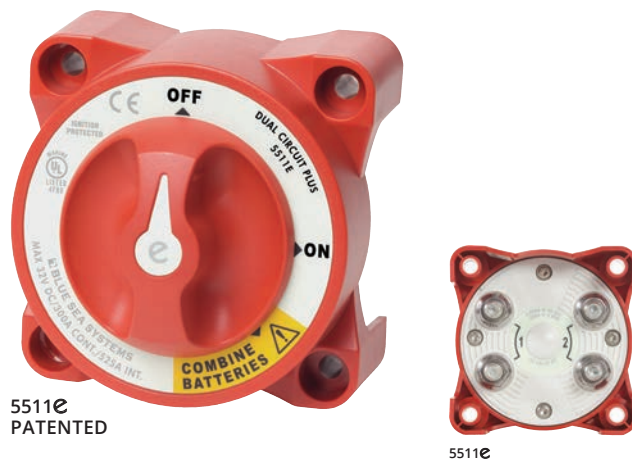
5510e
PATENTED

⚠ WARNING

The positive and negative conductors should not be attached to the same battery switch. The only exceptions are the Dual Circuit™ Battery Switches, 6010 and 5510e. Since these models have electrically isolated circuits and do not include a combine feature, they can provide disconnect to the positive and negative conductors simultaneously.

Dual Circuit Plus™

Simultaneously switches two isolated battery banks or combines battery banks to all loads. CAN NOT be used to switch positive and negative conductors because of the combine feature.



5511e
PATENTED

5511e

* Includes Alternator Field Disconnect (AFD)

HD Series Battery Switches

Up to 600 Amps continuous rating for large diesel engines

- Tin-plated copper studs for maximum conductivity and corrosion resistance
- Accepts up to 4/0 AWG (120 mm²) battery cables
- Studs accept 1/2" (M12) ring terminals
- 7/8" (22 mm) stud length accepts multiple cable terminals
- Blue Sea Systems one-piece terminal stud design never loosens over time
- One-piece stainless flange nuts ensure safe and secure connections
- Fits most Perko and Guest low amperage battery switch hole patterns
- Case design allows surface or rear mounting options
- Tactile indicator conveys knob position by feel
- Icon Circuit Identification Label Kit available 7902 - sold separately (p. 138)

Specifications	3000, 3001	3002, 3003, 11003
Cranking Rating: 30 sec.	1,750A	1,600A
Cranking Rating: 1 min.	1,325A	1,150A
Intermittent Rating: 5 min.	900A	700A
Continuous Rating	600A	500A
Voltage Max. Operating	32V DC	32V DC

Regulatory

CE marked, ISO 8846, UL Listed - UL 1107 electric power switches

Meets American Boat and Yacht Council (ABYC) requirements

Meets UL 1500 and SAE J1171 external ignition protection requirements

IP66 - protected against powerful water jets (see inside back cover)

PN	Description	AFD*
3000	Single Circuit ON-OFF	--
3001	Single Circuit ON-OFF	Yes
3002	Selector 4 Position	--
3003	Selector 4 Position	Yes
11003	Selector 3 Position	Yes

* Includes Alternator Field Disconnect (AFD) which protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

Mounting Options

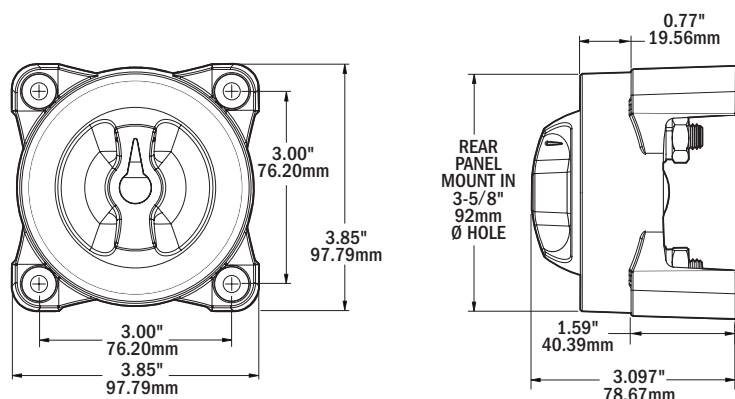
Rear



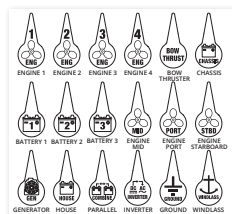
Front



For the full list of specifications and operation diagrams see pages 24-25



Related Products



Circuit Identification Label Kit
p. 138

Single Circuit ON-OFF

Switches a single battery to a single load group



3000, 3001*



3000



3001

Selector 3 Position

Switches isolated battery banks to all loads



3002, 3003*



3002



3003

Selector 4 Position

Switches isolated battery banks to all loads or combines battery banks to all loads



11003*



11003

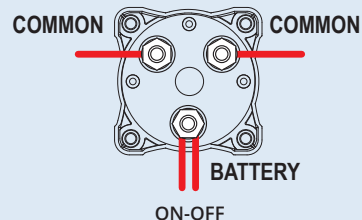
TECH tip™

HD Series Connections Explained

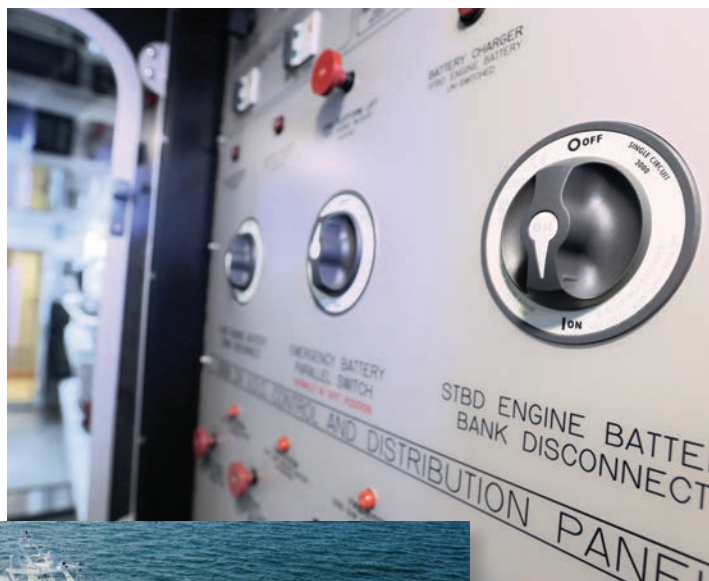
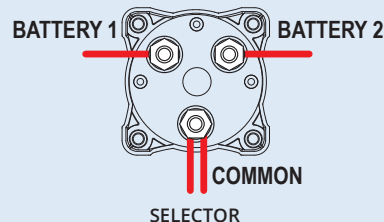
3000 and 3001 HD-Series ON-OFF battery switches have three studs; one stud for the battery connections and two studs for the common load terminations.

3002 and 3003 HD-Series Selector battery switches also have three studs; but the configuration is different with one stud for Battery 1, one stud for Battery 2, and one stud for the common load terminations.

3000 and 3001 Connections











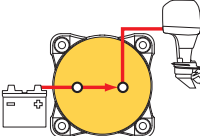
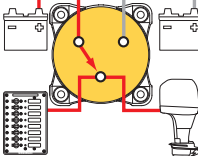
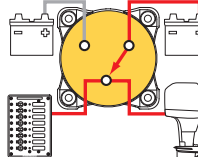
3002, 3003, and 11003 Connections



SeaForce IX builds custom sport fishing and cruising yachts which rely on Blue Sea Systems HD Heavy Duty Battery Switches for battery management in the engine room.










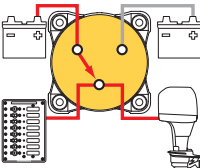
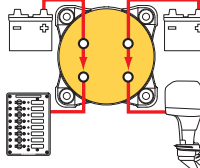
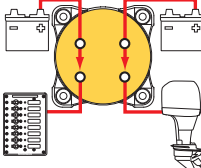
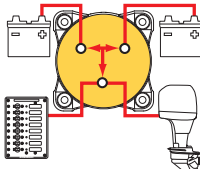
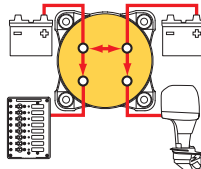
* Includes Alternator Field Disconnect (AFD)

Manual Battery Switch Specification Table

Switch Type	Single Circuit ON-OFF						Selector 3 Position	
Function	Switches a single battery to a single load group						Switches isolated battery banks to all loads	
Switch Family	m Series	m Series	e Series	e Series	HD Series	HD Series	e Series	HD Series
PN	 6005	 6006	 9003e	 9004e	 3000	 3001	 11001	 11003
Battery Inputs	1						2	
Switch Positions	2						3	
Battery Combine	--						--	
Alternator Field Disconnect*	--	--	Yes*	--	Yes*	--	Yes*	
Make Before Break Contact Design	N/A		N/A				N/A	
Cranking Rating (30 sec.)	900A		1,200A		1,750A		1,200A	1,600A
Intermittent Rating (5 min.)	500A		600A		900A		600A	700A
Continuous Rating	300A		350A		600A		350A	500A
Voltage Maximum Operating	48V DC		48V DC		32V DC		32V DC	
Width in (mm)	2.83" (72 mm)		3.85" (98 mm)				3.85" (98 mm)	
Height in (mm)	2.83" (72 mm)		3.85" (98 mm)				3.85" (98 mm)	
Mounting Centers	2.18" (55 mm)		3.00" (76 mm)				3.00" (76 mm)	
Mounting	#10 (M5) Screws		1/4" (M6) Screws				1/4" (M6) Screws	
Terminal Stud Size	3/8"-16 (M10)				1/2" (M12)		3/8"-16 (M10)	1/2" (M12)
Terminal Stud Length	7/8" (22 mm)						7/8" (22 mm)	
Maximum Terminal Stud Torque	120 in-lb (13.56 N-m)		140 in-lb (15.82 N-m)		220 in-lb (24.86 N-m)		140 in-lb (15.82 N-m)	220 in-lb (24.86 N-m)
Terminal Stud Material	Tin-plated copper						Tin-plated copper	
Cable Size to Meet Ratings ‡	4/0 AWG (120 mm²)						4/0 AWG (120 mm²)	
Cable Clearance for 4/0 Cables	1.12" (28.4 mm)		1.10" (27.9 mm)				1.10" (27.9 mm)	
Ignition Protected	UL 1500, SAE J1171						UL 1500, SAE J1171	
Ingress Protected	IP66						IP66	
Operation Diagrams These diagrams are intended for reference of how the switches operate and are not wiring diagrams. Consult an ABYC certified marine electrical professional for system design and circuit protection.	 Switch set to ON						 Switch set to 1  Switch set to 2	

* Alternator Field Disconnect (AFD) protects the diodes in the alternator in the event of the switch being switched to the OFF position while the engine is running. If the AFD is not used to protect the alternator, an LED can be connected to the AFD terminals to indicate when the battery switch is in any position but OFF.

‡ Reducing cable size will reduce current rating

Selector 4 Position					Dual Circuit™		Dual Circuit Plus™	
Switches isolated battery banks to all loads or combines battery banks to all loads					Simultaneously switches two isolated battery banks		Simultaneously switches two isolated battery banks or combines battery banks to all loads	
M Series	Ɖ Series	Ɖ Series	HD Series	HD Series	M Series	Ɖ Series	M Series	Ɖ Series
								
6007	9001e	9002e	3002	3003	6010	5510e	6011	5511e
2					2		2	
4					2		3	
Yes					--		Yes	
--	--	Yes*	--	Yes*	--		--	
Yes					--		Yes	
900A	1,200A		1,600A		675A per circuit	700A per circuit	675A per circuit	700A per circuit
500A	600A		700A		450A per circuit	525A per circuit	450A per circuit	525A per circuit
300A	350A		500A		300A per circuit	350A per circuit	300A per circuit	350A per circuit
32V DC					32V DC		32V DC	
2.83" (72 mm)	3.85" (98 mm)				2.83" (72 mm)	3.85" (98 mm)	2.83" (72 mm)	3.85" (98 mm)
2.83" (72 mm)	3.85" (98 mm)				2.83" (72 mm)	3.85" (98 mm)	2.83" (72 mm)	3.85" (98 mm)
2.18" (55 mm)	3.00" (76 mm)				2.18" (55 mm)	3.00" (76 mm)	2.18" (55 mm)	3.00" (76 mm)
#10 (M5) Screws	1/4" (M6) Screws				#10 (M5) Screws	1/4" (M6) Screws	#10 (M5) Screws	1/4" (M6) Screws
3/8"-16 (M10)	3/8"-16 (M10)		1/2" (M12)		3/8"-16 (M10)		3/8"-16 (M10)	
7/8" (22 mm)					7/8" (22 mm)		7/8" (22 mm)	
120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)		220 in-lb (24.86 N-m)		120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)	120 in-lb (13.56 N-m)	140 in-lb (15.82 N-m)
Tin-plated copper					Tin-plated copper		Tin-plated copper	
4/0 AWG (120 mm²)					4/0 AWG (120 mm²)		4/0 AWG (120 mm²)	
1.12" (28.4 mm)	1.10" (27.9 mm)				1.12" (28.4 mm)	1.10" (27.9 mm)	1.12" (28.4 mm)	1.10" (27.9 mm)
UL 1500, SAE J1171					UL 1500, SAE J1171		UL 1500, SAE J1171	
IP66					IP66		IP66	
 Switch set to 1					 Switch set to ON		 Switch set to ON	
 Switch set to 1+2							 Switch set to COMBINE BATTERIES	

Battery Management Panels

Easily manage multiple battery bank systems

- Isolates the Engine circuit from the House circuit
- Allows emergency cross connect between isolated battery banks
- Protects electronics from sags and spikes caused by engine cranking

Regulatory

Meets UL 1500 and SAE J1171 external ignition protection requirements



8280



8080

PN	8280	8080
Description	Dual Battery Bank-Traditional Metal Panel	Dual Battery Bank-Traditional Metal Panel
Voltage Max. Operating	48V DC	32V DC
Circuit Breakers	—	1 × C-Series Flat Rocker, MAIN 100A (p. 71)
Battery Switches	3 × m Series, 6006 (p. 18)	2 × m Series, 6006 (p. 18)
Width x Height in (mm)	6.25 (158.75) × 7.50 (190.50)	5.25 (133.35) × 6.50 (165.10)
Depth in (mm)	2.25 (57.15)	3.00 (76.20)
Labels Included	Square Format Label Set 4218 (p. 138)	Square Format Label Set 4218 (p. 138)



1408



8686



8690

PN	1408	8686	8690
Description	Dual Battery Bank - 360 Panel	Dual Battery Bank - Traditional Metal Panel	Dual Battery Bank - Traditional Metal Panel
Voltage Max. Operating	12V DC	24V DC	24V DC
24-hour circuits	3 unswitched	2 unswitched	2 unswitched
Circuit Breakers	1 × C-Series Flat Rocker, MAIN 100A (p. 71) 3 × Push Button Reset-Only, BRANCH 15A (p. 62)	1 × C-Series Flat Rocker, MAIN 100A (p. 71) 2 × Push Button Reset-Only, BRANCH 15A (p. 62) Spare aperture for additional Flat Rocker or Push Button Reset-Only	1 × C-Series Flat Rocker, MAIN 100A (p. 71) 2 × Push Button Reset-Only, BRANCH 15A (p. 62) Spare apertures for additional Flat Rocker or Push Button Reset-Only
Battery Switch	m Series, 6011200 (p. 18)	m Series, 6011 (p. 18)	℄ Series, 5511℄ (p. 20)
Width x Height in (mm)	4.88 (123.83) × 7.75 (196.85)	4.50 (114.30) × 7.50 (190.50)	5.25 (133.35) × 8.00 (203.20)
Depth in (mm)	3.50 (88.90)	3.25 (82.55)	3.00 (76.20)
LEDs	ON Indicating LEDs in all circuits	ON Indicating LEDs in all circuits	ON Indicating LEDs in all circuits
Labels Included	Square Format Label Set 4218 (p. 138)	24-hour Round Label Set 4140 Square Format Label Set 4218 (p. 138)	24-hour Round Label Set 4140 Square Format Label Set 4218 (p. 138)

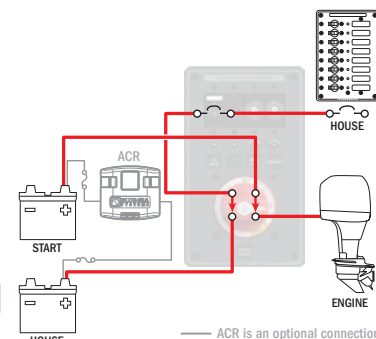


8689



8693

PN	8689	8693
Description	Triple Battery Bank - Traditional Metal Panel	Triple Battery Bank - Traditional Metal Panel
Voltage Max. Operating	24V DC	24V DC
24-hour circuits	3 unswitched	4 unswitched
Circuit Breakers	1 × C-Series Flat Rocker, MAIN 100A (p. 71) 3 × Push Button Reset-Only, BRANCH 15A (p. 62) Spare apertures for additional Flat Rocker or Push Button Reset-Only	1 × C-Series Flat Rocker, MAIN 100A (p. 71) 4 × Push Button Reset-Only, BRANCH 15A (p. 62) Spare apertures for additional Flat Rocker or Push Button Reset-Only
Battery Switches	2 × m Series, 6011 (p. 18)	2 × ℄ Series, 5511℄ (p. 20)
Width x Height in (mm)	7.25 (184.15) × 8.00 (203.20)	10.50 (266.70) × 8.00 (203.20)
Depth in (mm)	3.25 (82.55)	3.50 (88.90)
LEDs	ON Indicating LEDs in all circuits	ON Indicating LEDs in all circuits
Labels Included	24-hour Round Label Set 4140 Square Format Label Set 4218 (p. 138)	24-hour Round Label Set 4140 Square Format Label Set 4218 (p. 138)



System diagram for 8686 and 8690

Related Products



m ACR
p. 34



SI ACR
p. 35

L Series Solenoid Switch

250 Amp switch is remotely activated using a low amp switch and smaller gauge wire

- Hermetically sealed contacts
- Activated by a remote ON-OFF switch (p. 78)
- Coil control circuit minimizes heating and amperage draw



9012

Specifications

Operating Temperature Range	-55°C to +85°C
Coil Circuit Connection	20 AWG Tinned Wire
Voltage Nominal	12/24V DC
Coil Function	Normally Open
Operating Current	3.6A When Changing State 0.13A @ 12V, 0.07A @ 24V Continuous
Voltage Input	9V-36V DC
Switching Cycles	300,000
Terminal Studs	M8 (accepts 5/16" terminals)
Terminal Stud Torque	90 in-lb (10 Nm) max.
Mounting Screws	#10 or M5
Mounting Screw Torque	15-35 in-lb (1.7-4 Nm)
Weight	0.9 lb (0.41 kg)

Contact Rating:

Continuous Rating	300A*
Cranking Rating (30 sec.)	1,000A*
Voltage Maximum	800V DC

*2/0 Cable in 50° C ambient

Regulatory

CE marked for EC applications
Ignition protected - ISO 8846 and SAE J1171
UL Certified - UL 508 Industrial Control Equipment
IP67-protected against immersion up to 1 meter for 30 minutes

PN	Description
9012	L Series Solenoid Switch

For the full list of specifications see page 40

Related Product



ON-OFF Switch 8230
p. 78

Wire Size and Current Ratings

Wire Size	Cranking 30 sec.	Intermittent 5 min.	Continuous (UL 1107)
1/0 AWG	900A	275A	250A
2/0 AWG (70 mm²)	1000A	400A	300A
2× 2/0 AWG (2× 70 mm²)	1,450A	600A	450A

TECH tip™

Solenoid vs Remote Battery Switch Explained

Solenoid: An electronic switch with no manual control, for circuits where a manual battery disconnect is offered elsewhere in the circuit.

Remote Battery Switch: A solenoid or relay with a manual control switch allowing for switching if control circuit is compromised and for service lockout.

ML Series Solenoid Switches

500 Amp magnetic latching (bi-stable) solenoid provides switching under load where manual control is not required



2145 Remote Control Contura Switch

Action:
SPDT (ON)-OFF-(ON)



Deutsch DTM Cable End provided on bulk units.

Other connector plugs are available for high volume OEM applications



7701

Wire Harness Connections

Wire Color	Circuit Function
Red	+V DC, 24 Hour
Black	Ground
Yellow	-V DC, LED Output
Brown	+V DC, To Close
Orange	+V DC, To Open

- Silver alloy contacts provide high reliability for switching live loads
- LED output to remotely indicate switch state - requires optional LED (p. 137)
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- One-piece stainless flange nuts ensure safe and secure connections
- Label recesses for circuit identification
- Retail package includes 2145 Remote Control Contura Switch (p. 79)

Specifications

Voltage Maximum Operating (contacts)	32V DC
Voltage Maximum Operating (coil)	16V DC (12V DC), 32V DC (24V DC)
Amperage Operating Current when changing state	<7A DC (12V DC), <4A DC (24V DC)
Remote Control Switch Current	<100 mA
Live Current Switching	300A @ 12V DC - 10,000 Cycles

Regulatory

CE marked, Meets ISO 8846 and SAE J1171 external ignition protection requirements
IP66 - protected against powerful water jets (see inside back cover)

Wire Size and Current Ratings

Wire Size	Cranking 30 sec.	Intermittent 5 min.	Continuous (UL 1107)
2/0 AWG (70 mm²)	1,000A	400A	225A
4/0 AWG (120 mm²)	1,100A	400A	300A
2× 4/0 AWG (2× 120 mm²)	1,450A	700A	500A

PN	Nominal Voltage	Cable End	Packaged
7701	12V DC	Stripped Wire	Retail
7701100B	12V DC	Deutsch DTM	Bulk
7703	24V DC	Stripped Wire	Retail
7703100B	24V DC	Deutsch DTM	Bulk

For the full list of specifications see page 40

For the dimension drawing see page 31

Related Products



Paralleling Link Bus
p. 31



Remote Control Contura Switch
p. 79



LEDs
p. 137

m LVD Low Voltage Disconnect



Senses low battery voltage and disconnects non-critical loads to save power for engine starting



7635



7928 Remote Control Contura Switch included in retail package.

- Status light in both m-LVD and Remote Control Switch provides visual warning of low voltage state prior to disconnect
- Alarm output for audible warning of low voltage state prior to disconnect (optional alarm required)
- One-piece stainless flange nuts ensure safe and secure connections
- Remote Control Switch functions:
 - Sets desired disconnect voltage
 - Temporarily delays circuit disconnect for 10 minutes
 - Temporarily disconnects circuits until voltage rises
 - Silences alarm (optional alarm required)
- Includes Remote Control Switch PN 7928 (p. 78)

Specifications

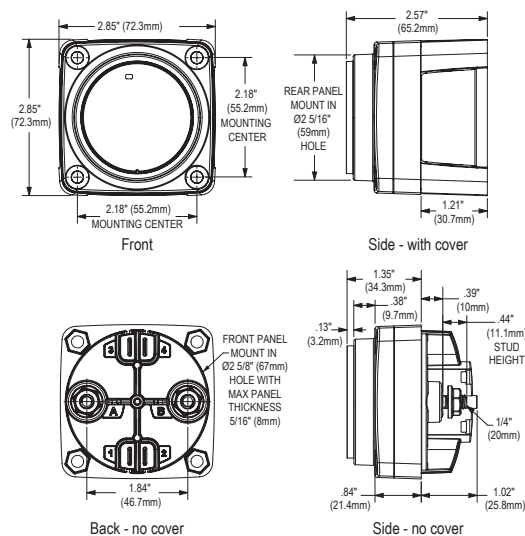
Intermittent Rating: 5 min.	115A
Continuous Rating	65A
Nominal Voltage	12V DC
Cable Size (to meet current ratings)	6 AWG (16mm ²)
Terminal Stud Size	1/4"-20 (M6)
Disconnect Voltage	11.3V-12.1V Adjustable
Reconnect Voltage	13V DC
Remote Control Switch	Type: SPDT Action: (ON)-OFF-(ON) () = momentary

Regulatory

Meets ISO 8846 and SAE J1171 external ignition protection requirements

PN	Description
7635	m LVD Low Voltage Disconnect

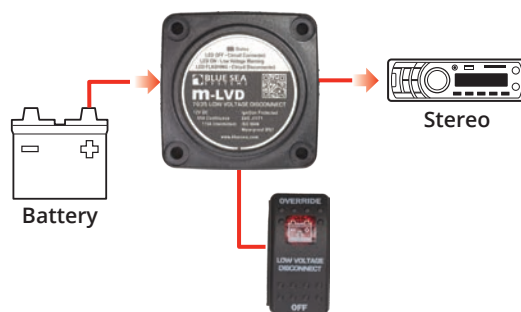
For the full list of specifications see page 41



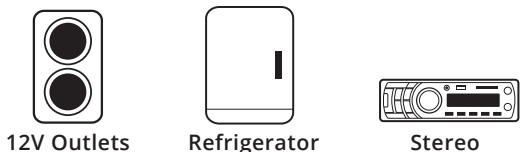
Mounting Options



m LVD System



Common Applications



Also serves as a low voltage monitor

Related Products

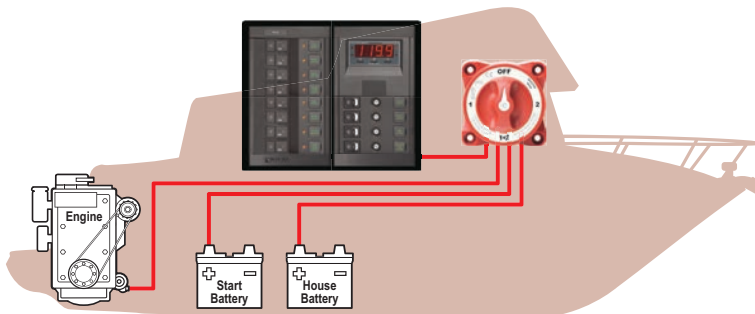


Remote Battery Switches

A Remote Battery Switch (RBS) is a 500A relay and remote control switch connected by small gauge single wire. High amperage switching is achieved with the relay mounted next to the batteries and controlled either manually by a switch on the remote battery switch or by the remote switch mounted in an accessible location. Read the TECH Tip, Solenoid vs Remote Battery Switch RBS Explained on page 27.

The installed cost of a remote battery compared to manual battery switch may not be that different. The cost savings from eliminating long runs of expensive large gauge battery cables and replacing them with light gauge control wires can often offset the cost of a remote battery switch.

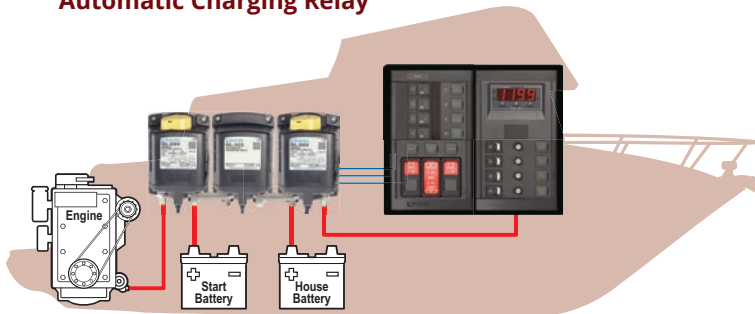
4 Position Selector Switch



Traditional Battery Switch (40' of 4/0 AWG Cable)

- Long runs of large cable create voltage drop
- Decreased power to engine
- Increases weight
- More expensive

ML Series Remote Battery Switches and Automatic Charging Relay



Remote Battery Management with small control wire (5' of 4/0 AWG Cable)

- Minimizes cable run and voltage drop
- Maximizes power to engine
- Reduces weight
- Saves money

TECH tip™

Maretron System Explained

Blue Sea Systems' popular family of ML Remote Battery Switches (ML-RBS) now integrate with the Maretron's NMEA 2000 Network. This integration allows control and status monitoring of a vessel's battery and other high amperage DC switching from anywhere on the boat where a Maretron display is present. Visit www.bluesea.com for more information.

Basic System

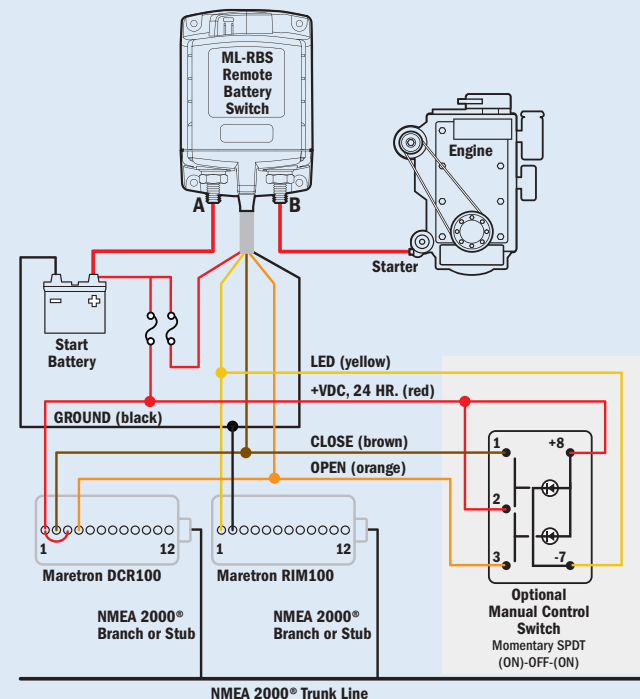
This basic system allows the Blue Seas Systems Remote Battery Switch (7700 or 7702) to be monitored and controlled over an NMEA 2000 network using Maretron's 3.5" color display. The state of the battery (On or Off) is indicated on the display and the battery switch can be turned On or Off from the display.

Intermediate System

This intermediate system allows the Blue Seas Systems Remote Battery Switch (7700 or 7702) to be monitored and controlled over an NMEA 2000 network using Maretron's 3.5" color display. The state of the battery (On or Off) is indicated on the display and the battery switch can be turned On or Off from the display. In addition, the Ethernet gateway and WiFi/Router allow a Smartphone or tablet device running N2KView® Mobile to monitor and control the battery switch.

Comprehensive System

This comprehensive system allows the Blue Seas Systems Remote Battery Switch (7700 or 7702) to be monitored and controlled over an NMEA 2000 network using Maretron's 8" touchscreen display (TSM800C). The state of the battery (On or Off) is indicated on the display and the battery switch can be turned On or Off from the display. In addition, the Ethernet gateway and WiFi/Router allow a Smartphone or tablet device running N2KView® Mobile to monitor and control the battery switch.



ML Series Remote Battery Switches

500 Amp magnetic latching switch provides high amperage switching under load, manually or from remote locations

- Silver alloy contacts provide high reliability for switching live loads
- LED output to remotely indicate switch state - requires optional LED (p. 137)
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- One-piece stainless flange nuts ensure safe and secure connections
- Label recesses for circuit identification
- Retail package includes a Remote Control Contura Switch (p. 79)

Specifications

	12V DC	24V DC
Control Circuit Connection	Tinned Wire	Tinned Wire
Mounting	#10 or M5	#10 or M5
Terminal Stud Size	3/8"-16 (M10)	3/8"-16 (M10)
Maximum Terminal Stud Torque	140 in-lb (15.8 N•m)	140 in-lb (15.8 N•m)
Cable Size to Meet Rating	4/0 AWG (120mm ²)	4/0 AWG (120mm ²)
Terminal Ring Diameter Clearance	1.12" (28.4 mm)	1.12" (28.4 mm)
Control Circuit Voltage	9-16V DC	18-32V DC

Regulatory

CE marked, Meets ISO 8846 and SAE J1171 external ignition protection requirements
IP66 - protected against powerful water jets (see inside back cover)

Remote Control Contura Switch

Seals	Internal & External Gasket Panel Seal
Mounting Hole	0.83"x 1.45" (21.08 mm x 36.83 mm)
LED Rating	100,000 hours 1/2 life
Operating Current (LED)	18mA

Wire Size and Current Ratings

Wire Size	Cranking 30 sec.	Intermittent 5 min.	Continuous (UL 1107)
2/0 AWG (70 mm ²)	1,000A	400A	225A
4/0 AWG (120 mm ²)	1,100A	400A	300A
2x 4/0 AWG (2x 120 mm ²)	1,450A	700A	500A

PN	Nominal Voltage	Cable End	Packaged
7700	12V DC	Stripped Wire	Retail
7700100B	12V DC	Deutsch DTM	Bulk
7702	24V DC	Stripped Wire	Retail
7702100B	24V DC	Deutsch DTM	Bulk
7713	12V DC	Stripped Wire	Retail
7713100B	12V DC	Deutsch DTM	Bulk
7717	24V DC	Stripped Wire	Retail
7717100B	24V DC	Deutsch DTM	Bulk

For the full list of specifications see page 40-41



Remote Control Contura Switch included in retail package



Deutsch DTM Cable End provided on bulk units. Other connector plugs are available for high volume OEM applications



Wire Harness Connections

Wire Color	7700, 7700100B 7702, 7702100B Circuit Function	7713, 7713100B 7717, 7717100B Circuit Function
Red	+V DC, 24 Hour	Control +V DC, To Close
Black	Ground	Ground
Yellow	-V DC LED Output	-V DC LED Output
Brown	+V DC, To Close	--
Orange	+V DC, To Open	--

Related Products



Paralleling Link Bus
p. 31



ML Series ACR
p. 39



Battery Management
Panels p. 79



LEDs
p. 137

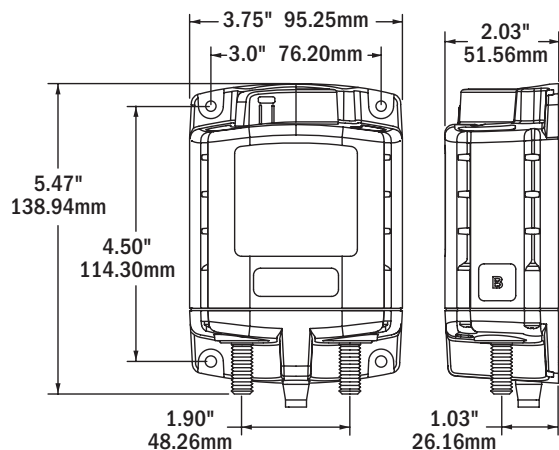
Selection Chart Choose the right Remote Battery Switch for your application



PN	7700	7702	7713	7717
Application	Battery switching from a convenient location with Multi-Station control capability and no continuous current draw		Battery switching from a convenient location with Master ON-OFF control of individually switched units	
Manual Control Override Knob	Provides an added level of safety allowing control with or without power, and offering LOCKED OFF capability for security and servicing			
Nominal Voltage	12V DC	24V DC	12V DC	24V DC
Contact Circuit Voltage	16V DC Max.	32V DC Max.	16V DC Max.	32V DC Max.
Control Wires	2 wires connect battery switch to remote switch: one to open and one to close relay		1 wire connects battery switch to remote switch	
Control Current	Positive pulsed once to change relay state		Positive continuous current to close	
Operating Current - continuous @ 25°C nominal VDC	0mA		< 13mA	
Amperage Operating Current - when changing state	< 7.0A DC	< 4.0A DC	< 7.0A DC	< 4.0A DC
Coil Function	Magnetic Latching Bi-Stable		Magnetic Latching Auto-Releasing	
Remote Control Contura Switch Included	2145 SPDT (ON)-OFF-(ON)*		2155 SPDT ON-ON*	
Multi-Station Switching Capability	Yes		--	
Master Control Switch Capability	-		Yes	

* Although a SPST switch may be used if desired, use of a SPDT switch improves immunity to inadvertent switching if the control switch becomes damp.

7713 and 7717 have superseded 7712 and 7714 respectively. The update offers improved manual override functionality which is outlined on www.blueseas.com and in the product instructions. No changes were made to the form, fit, or normal ON/OFF functionality.



Paralleling Link Bus

For paralleling ML Series Remote Battery Switches and Automatic Charging Relays

- Tin-plated copper for maximum conductivity and corrosion resistance
- 500A continuous rating

PN	Description
9160	Paralleling Link Bus

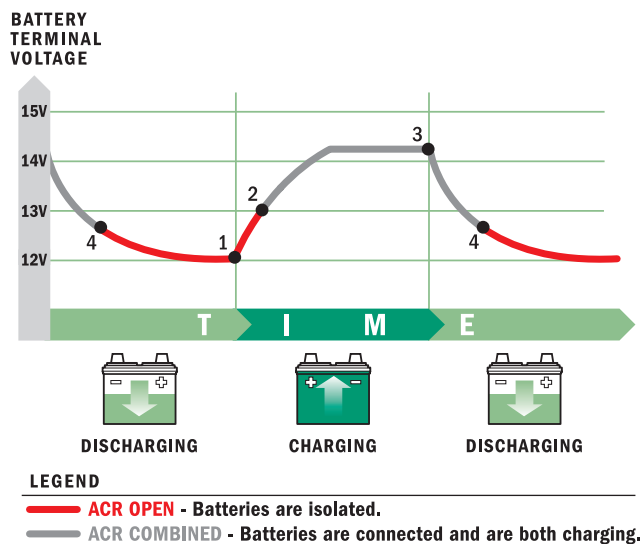


9160



Intro to Automatic Charging Relays

Automatic Charging Relay Operation



1. ACR relay is open and batteries are isolated. Voltage begins to rise slowly after engine starts or battery charger is turned on.
2. When voltage rises to COMBINE voltage 13.0V in this example, ACR relay closes, connecting and charging both batteries.
3. When engine stops or battery charger is turned off, voltage rapidly begins falling.
4. When voltage falls to ISOLATE voltage 12.75 in this example ACR relay opens, isolating batteries while discharging.



Back Cove Yachts installs the SI ACR as original equipment aboard their yachts, including the Back Cove 37.

TECH tip™

Automatic Charging Relays Explained

In a boat or vehicle with two battery banks, it is useful to be able to charge both banks while underway. Charge management devices allow two battery banks to be charged from a single source, such as an alternator, but keep batteries isolated when not charging. If one battery becomes depleted, there will be a charged bank available for emergency starting.

There are two types of charge management devices used on boats: Automatic Charging Relays (ACR) use a relay combined with a voltage sensing circuit. When a charge is being applied to a battery and the voltage rises over 13V DC, the relay closes and combines the two batteries. When the charge is taken away or the load on the battery is greater than the charging input causing the voltage to drop to 12.75V DC, the relay opens and isolates the two batteries.

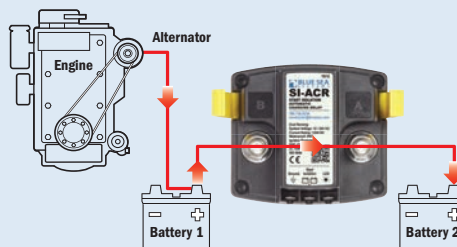
Battery Isolators are one-way electrical check valves that allow current to flow to, but not from, the battery. Their disadvantage is that they use diodes, which cause a voltage drop that consumes charging energy, creates heat, and causes batteries to be undercharged. Although alternators with external voltage sensing can correct for undercharging, voltage drop and heat remain a problem.

Zero Drop Isolators have more recently been developed to address the voltage drop issue of the traditional isolator but often have a higher price than either of the other two options mentioned above.

Automatic Charging Relay vs. Battery Isolator

Automatic Charging Relay

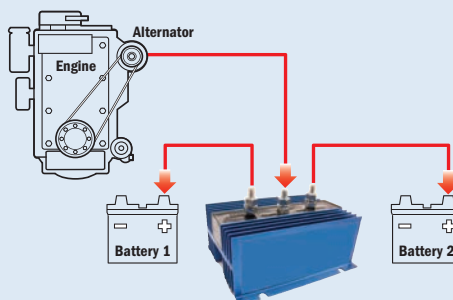
A lower voltage drop replacement for battery isolators
.05V Drop - Batteries Fully Charged



An ACR passes the current from one battery to the other

Battery Isolator

.6V Drop - Batteries Under Charged



An isolator splits the current

Selection Chart Choose the right Automatic Charging Relay for your application

1 Select an ACR that has a **CONTINUOUS** rating above the maximum alternator output rating and an **INTERMITTENT** rating that is above the largest load on the auxiliary battery.

2 Review the **PRESET ACR SETTINGS**

3 Select the ACR with the desired **PRODUCT FEATURES**

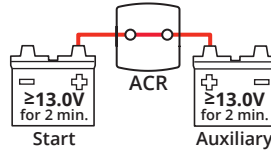


PN	7601	7611	7610	7620	7622
CONTINUOUS	65A	120A	120A	500A	500A
INTERMITTENT	115A	210A	210A	700A	700A

PRESET ACR SETTINGS

Combine Voltage

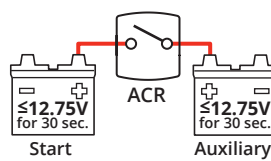
- Charge present and loads do not exceed charge input
- Voltage of either battery is $\geq 13.0V$ for 2 min.
- Relay will close, combining batteries
- Combined batteries share charge



✓	✓	✓	✓	✓
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Open Voltage

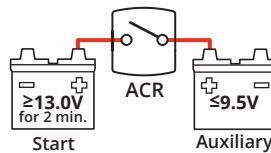
- No charge present or loads exceed charge input
- Combine voltage is $\leq 12.75V$ for 30 sec.
- Relay will open, isolating batteries
- Isolated batteries do not share charge



✓	✓	✓	✓	✓
---	---	---	---	---

Under Voltage Lockout

- Charge may or may not be present
- Voltage of either battery is $\leq 9.5V$ (ML-ACR 9.6V)
- Relay will not close even with charge on other battery, protecting ACR and wiring from high surge current
- Isolated batteries do not share charge



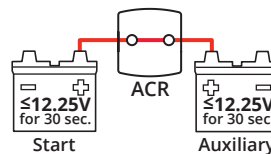
✓		✓	✓	✓
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PRODUCT FEATURES

Auxiliary Battery Priority (Optional)

Condition: Engine running

- Open voltage is lowered to 12.25V from 12.75V
- Relay remains closed longer, combining batteries, to allow use of auxiliary loads for a longer period of time

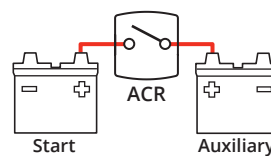


	✓			
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Start Isolation (Optional)

Condition: Engine starting

- Relay is open, isolating batteries
- Batteries are isolated to protect sensitive electronics from voltage sags and spikes

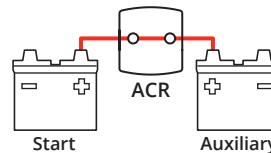


✓		✓	✓	✓
---	--	---	---	---

Start Assist

Condition: Engine starting - (Press Contura Switch)

- Relay is closed, combining batteries
- Batteries are combined to share power in the event of a low start battery

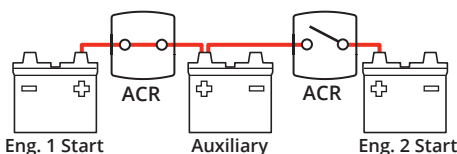


			✓	✓
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Engine Isolation

Condition: Two engines are running

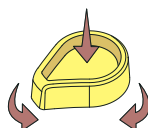
- One relay is open and one relay is closed
- Engine 1 Start and Engine 2 Start batteries are isolated to protect engine electronics
- If requested by engine manufacturer



			✓	✓
--	--	--	---	---

Manual Override

Manual override knob provides an added level of safety allowing manual control of ON-OFF



				✓
--	--	--	--	---

m ACR Automatic Charging Relay

VIDEO 

with optional Start Isolation

Automatically combines batteries during charging, isolates batteries when discharging and when starting engines

- 65 Amp continuous rating
- 12V/24V DC auto ranging voltage input
- Senses charging on two battery banks
- Case design allows surface, rear, or front panel mounting options
- Snap-on cover insulates terminal connections
- One-piece stainless flange nuts ensure safe and secure connections
- Integrated LED indicates ACR states
- Quick connect terminals for ground and start isolation

Optional Features

- Start Isolation allows temporary isolation of House loads from Engine circuit during engine cranking to protect sensitive electronics from sags and spikes

Specifications

Intermittent Rating: 5 min.	115A
Continuous Rating	65A
(Combine) Amperage Operating Current	90mA
(Open) Amperage Operating Current	15mA
Nominal Voltage	12V / 24V DC
Cable Size to meet current ratings	6 AWG (16mm ²)
Maximum Cable Size	1/0 AWG (50mm ²)
Terminal Stud Size	1/4"-20 (M6)
Terminal Stud Length	7/16" (11 mm)

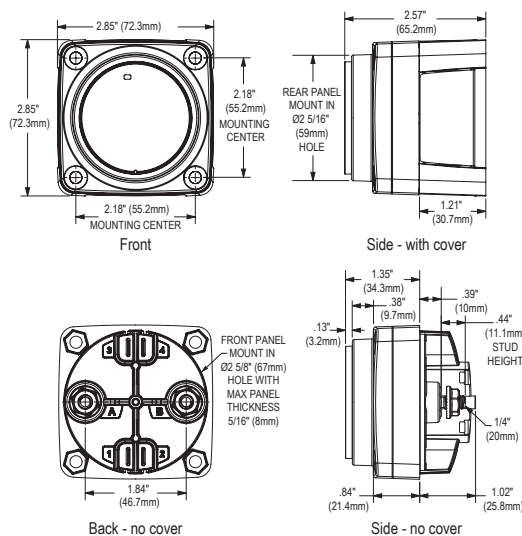
Relay Contact Position	12V DC	24V DC
Combine (30 sec.)	13.6V DC	27.2V DC
(2 min.)	13.0V DC	26.0V DC
Open (10 sec.)	12.35V DC	24.7V DC
(30 sec.)	12.75V DC	25.5V DC
Over Voltage Lockout	16.0V DC	--
Under Voltage Lockout	9.5V DC	19.0V DC
Under Voltage Recovery	10.0V DC	20.0V DC

Regulatory

CE marked, ISO 8846
Meets SAE J1171 external ignition protection requirements
IP67 - protected against immersion up to 1 meter for 30 minutes (see inside back cover)

PN	Description
7601	mACR Automatic Charging Relay

For the full list of specifications see page 41



7601



Mounting Options



Rear



Front



Surface

Related Products



m Series Battery Switch
p. 18



Mini Add-A-Battery
p. 36



MRBF® Terminal
Fuse Blocks
p. 54



WeatherDeck® OFF-ON
Toggle Switch
p. 80

SI ACR Automatic Charging Relay VIDEO

with optional Start Isolation

Automatically combines batteries during charging, isolates batteries when discharging and when starting engines

- 120A continuous rating to support high output alternators
- 12V/24V DC auto ranging voltage input
- Senses charging on two battery banks
- Side and bottom knockouts for cable connections
- Clip-on cover insulates terminal connections
- Studs accept multiple cable terminals
- One-piece stainless flange nuts ensure safe and secure connections
- Integrated LED indicates ACR status
- Quick connect terminals for ground and optional features

Optional Features

- Start Isolation allows temporary isolation of House loads from Engine circuit during engine cranking to protect sensitive electronics from sags and spikes
- Remote LED remotely indicates ACR states - requires optional LED (p. 137)

Specifications

Intermittent Rating: 5 min.	210A	
Continuous Rating	120A	
(Combine) Amperage Operating Current	175mA	
(Open) Amperage Operating Current	15mA	
Nominal Voltage	12V / 24V DC	
Cable Size to Meet Current Ratings	1 AWG (50mm²)	
Maximum Cable Size	1/0 AWG (50mm²)	
Terminal Stud Size	3/8"-16 (M10)	
Relay Contact Position	12V DC	24V DC
Combine (30 sec.)	13.6V DC	27.2V DC
(2 min.)	13.0V DC	26.0V DC
Open (10 sec.)	12.35V DC	24.7V DC
(30 sec.)	12.75V DC	25.5V DC
Over Voltage Lockout	16.0V DC	30.0V DC
Under Voltage Lockout	9.5V DC	19.0V DC
Under Voltage Recovery	10.0V DC	20.0V DC

Regulatory

CE marked, ISO 8846 Meets UL 1500 and SAE J1171 external ignition protection requirements
IP67 - protected against immersion up to 1 meter for 30 minutes (see inside back cover)

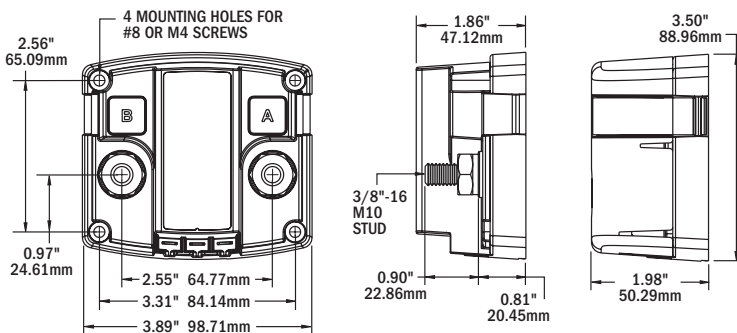
PN	Description
7610	SI ACR Automatic Charging Relay

For the full list of specifications see page 41



7610

Alternators
up to **120A**


7610
cover off


Related Products


E Series Battery Switch
p. 20

Add-A-Battery
p. 36

MRBF® Terminal
Fuse Blocks
p. 54

WeatherDeck® OFF-ON
Toggle Switch
p. 80

LEDs
p. 137

Mini Add-A-Battery Kit VIDEO ▶

Simplifies switching and automates charging for a 65A, two battery bank solution for outboard powered boats

- For alternators up to 65A
- Includes the **M Series Dual Circuit Plus Battery Switch 6011** (p. 18) and the **M ACR Automatic Charging Relay 7601** (p. 34)

M Series Dual Circuit Plus™ Battery Switch

- Switches two battery banks simultaneously while maintaining battery bank isolation
- Can combine two battery banks in the event of a low start battery
- IP66 - protected against powerful water jets

M ACR Automatic Charging Relay

- Automatically combines battery banks when charging and isolates when discharging
- Start isolation protects sensitive electronics from voltage sags and spikes
- Dual Sensing senses charge on two battery banks
- IP67 - protected against immersion up to 1 meter for 30 minutes

PN Description

7649 Mini Add-A-Battery Kit



7649

Related Products



M Series
Battery Switch
p. 18



M ACR
p. 34



WeatherDeck® OFF-ON
Toggle Switch
p. 80

Add-A-Battery Kit VIDEO ▶

Simplifies switching and automates charging for a 120A, two battery bank solution for inboard and outboard powered boats

- For alternators up to 120A
- Includes the **E Series Dual Circuit Plus Battery Switch 5511E** (p. 20) and the **SI ACR Automatic Charging Relay 7610** (p. 35)

E Series Dual Circuit Plus™ Battery Switch

- Switches two battery banks simultaneously while maintaining battery bank isolation
- Can combine two battery banks in the event of a low start battery
- IP66 - protected against powerful water jets

SI ACR Automatic Charging Relay

- Automatically combines battery banks when charging and isolates when discharging
- Start isolation protects sensitive electronics from voltage sags and spikes
- Dual Sensing senses charge on two battery banks
- IP67 - protected against immersion up to 1 meter for 30 minutes

PN Description

7650 Add-A-Battery Kit



7650

Related Products



E Series Battery Switch
p. 20



SI ACR
p. 35



WeatherDeck® OFF-ON
Toggle Switch
p. 80



MRBF® Terminal
Fuse Blocks
p. 54

BatteryLink® ACR Automatic Charging Relay

with optional Auxiliary Battery Priority

Automatically shares single source of charge with Auxiliary Battery

- 120A continuous rating to support high output alternators
- 12V/24V DC auto ranging voltage input
- Senses charging on two battery banks
- Side and bottom knockouts for cable connections
- Clip-on cover insulates terminal connections
- Studs accept multiple cable terminals
- One-piece stainless flange nuts ensure safe and secure connections
- Integrated LED indicates ACR status
- Quick connect terminals for ground and optional features

Optional Features

- Optional Auxiliary Battery Priority connection shares the alternator charge with the Auxiliary battery longer when the engine is running to allow the use of auxiliary loads for an extended period of time
- Remote LED remotely indicates ACR states - requires optional LED (p. 137)

Specifications

Intermittent Rating: 5 min.	210A
Continuous Rating	120A
(Combine) Amperage Operating Current	175mA
(Open) Amperage Operating Current	15mA
Nominal Voltage	12V / 24V DC
Cable Size to Meet Ratings	1 AWG (50mm ²)
Maximum Cable Size	1/0 AWG (50mm ²)
Terminal Stud Size	3/8"-16 (M10)
Maximum Battery Size	850 CCA

Relay Contact Position		12V DC	24V DC
Combine	(30 sec.)	13.6V DC	27.2V DC
	(2 min.)	13.0V DC	26.0V DC
Open Low	(30 sec.)	12.75V DC	25.5V DC
Over Voltage Lockout		16.0V DC	--

Auxiliary Priority - Optional Feature

Open Low	(30 sec.)	12.25V DC	24.5V DC
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Regulatory

CE marked, ISO 8846

Meets UL 1500 and SAE J1171 external ignition protection requirements

IP67 - protected against immersion up to 1 meter for 30 minutes (see inside back cover)

PN	Description
7611	BatteryLink® ACR

For the full list of specifications see page 41



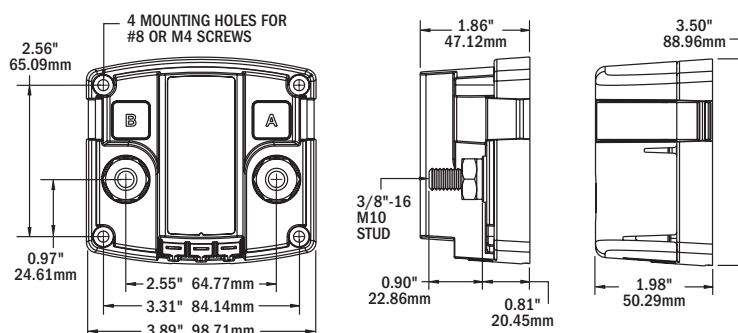
7611

Alternators
up to 120A

Alternators
up to 120A



7611
cover off



Related Products



E Series Battery Switch
p. 20



MRBF® Terminal
Fuse Blocks
p. 54



WeatherDeck® OFF-ON
Toggle Switch
p. 80



LEDs
p. 137

ML Series Automatic Charging Relays



500 Amp magnetic latching (bi-stable) relay automatically combines batteries during charging and isolates batteries when discharging and when starting engine

- Magnetic Latching (ML) relay draws very low current in the ON state
- Start Isolation (SI) can be configured for temporary isolation of House loads from Engine circuit during engine cranking to protect sensitive electronics
- Engine Isolation (EI) can be configured for isolation of two engines while both are running to protect engine electronics and maximize alternator output
- Manual override knob provides an added level of safety allowing control with or without power and offering LOCKED OFF capability for servicing
- Senses charging on two battery banks
- LED output to remotely indicate switch state - requires optional LED (p. 137) or Remote Control Contura Switch with integrated LED (included in retail package)
- 3/8"-16 tin-plated copper studs for maximum conductivity and corrosion resistance
- 7/8" (22 mm) stud length accepts multiple cable terminals
- One-piece stainless flange nuts ensure safe and secure connections
- Label recesses for circuit identification
- Silver alloy contacts provide high reliability for live switching
- Retail packaging includes Remote Control Contura Switch 2146 (p. 79)

Specifications

ML-Coil Function	Bi-Stable	
Live Current Switching	300A @ 12V DC-10,000 Cycles	
Relay Contact Position	12V DC	24V DC
Combine (30 sec.)	13.5V DC	27.0V DC
(2 min.)	13.0V DC	26.0V DC
Open (10 sec.)	12.35V DC	24.7V DC
(30 sec.)	12.75V DC	25.5V DC
Over Voltage Lockout	16.2V DC	32.4V DC
Under Voltage Lockout	9.6V DC	19.2V DC
Under Voltage Recovery	10.0V DC	20.0V DC

Regulatory

CE marked, Meets ISO 8846 and

SAE J1171 external ignition protection requirements

IP66-protected against powerful water jets (see inside back cover)

Wire Size and Current Ratings

Wire Size	Cranking 30 sec.	Intermittent 5 min.	Continuous (UL 1107)
2/0 AWG (70 mm ²)	1,000A	400A	225A
4/0 AWG (120 mm ²)	1,100A	400A	300A
2x 4/0 AWG (2x 120 mm ²)	1,450A	700A	500A

PN	Coil Volts	Cable End	Manual Control	Packaged
7620	12V DC	Stripped Wire	No	Retail
7620100B	12V DC	Deutsch DTM	No	Bulk
7622	12V DC	Stripped Wire	Yes	Retail
7622100B	12V DC	Deutsch DTM	Yes	Bulk
7621	24V DC	Stripped Wire	No	Retail
7621100B	24V DC	Deutsch DTM	No	Bulk
7623	24V DC	Stripped Wire	Yes	Retail
7623100B	24V DC	Deutsch DTM	Yes	Bulk

For the full list of specifications see page 41

For the dimension drawing see page 31

Related Products



ML Series
Remote Battery Switches
p. 30



Paralleling Link Bus
p. 31



MRBF® Terminal
Fuse Blocks
p. 54



Battery Management
Panels
p. 79



7622



2146 Remote Control
Contura Switch
Action: ON-OFF-ON



7620










Deutsch DTM Cable
End provided on
bulk units.
Other connector plugs
are available for high
volume OEM applications

Wire Harness Connections

Wire Color	Circuit Function
Red	Remote
Black	Ground
Yellow	LED Output
Brown	SI/EI #1
Green	SI/EI #2
Orange	SI/EI #3

Solenoid and Remote Battery Switch Specification Table

Product Type	Solenoid Switches			Remote Battery Switches (RBS)			
Function	Provides high-amp switching			Provides high-amp switching with manual override			
Product	L Series Solenoid	ML Solenoid	ML Solenoid	ML RBS	ML RBS	ML RBS	ML RBS
							
PN	9012	7701*	7703*	7700*	7702*	7713*	7717*
Manual Control	--	--	--	Yes			
Nominal Voltage	12V/24V DC	12V DC	24V DC	12V DC	24V DC	12V DC	24V DC
Cranking Rating (30 sec.)	1,000A DC	1,450A DC		1,450A DC			
Intermittent Rating (5 min.)	400A DC	700A DC		700A DC			
Continuous Rating	300A DC	500A DC		500A DC			
Amperage Operating Current - continuous @ 25°C nominal VDC	0.13A @ 12V DC 0.07A @ 24V DC	0mA		0mA		< 13mA	
Amperage Operating Current - when changing state	3.6A DC	< 7.0A DC	< 4.0A DC	< 7.0A DC	< 4.0A DC	< 7.0A DC	< 4.0A DC
Switching Cycles	300,000	100,000		100,000			
Coil Function	Normally Open	Magnetic Latching Bi-Stable		Magnetic Latching Bi-Stable		Magnetic Latching Auto-Releasing	
Remote Control Switch Included	--	2145 SPDT (ON)-OFF-(ON)		2145 SPDT (ON)-OFF-(ON)		2155 SPDT ON-ON	
Control Circuit Connection	Tinned Wire	Tinned Wire		Tinned Wire			
Mounting	#10 or M5	#10 or M5		#10 or M5			
Terminal Stud Size	5/16" (M8)	3/8"-16 (M10)		3/8"-16 (M10)			
Terminal Stud Length	5/8" (16 mm)	7/8" (22 mm)		7/8" (22 mm)			
Maximum Terminal Stud Torque	90 in-lb (10.0 Nm)	140 in-lb (15.5 Nm)		140 in-lb (15.8 Nm)			
Cable Size to Meet Ratings	2/0 AWG (70mm²)	4/0 AWG (120 mm²) × 2		4/0 AWG (120 mm²) × 2			
Terminal Ring Diameter Clearance	not rated	1.12" (28.4 mm)		1.12" (28.4 mm)			
Width	3.17" (80.50 mm)	3.75" (95.2 mm)		3.75" (95.2 mm)			
Height	2.63" (66.80 mm)	5.47" (138.9 mm)		5.47" (138.9 mm)			
Depth	2.86" (72.64 mm)	2.03" (51.6 mm)		2.03" (51.6 mm)			
Ignition Protected	ISO 8846 SAE J1171	ISO 8846, SAE J1171		ISO 8846, SAE J1171			
Ingress Protected (see inside back cover)	IP67 - protected against immersion up to 1 meter for 30 minutes	IP66-protected against powerful water jets		IP66-protected against powerful water jets			

* Bulk units available that incorporate Deutsch DTM Connectors. Other connector plugs are available for high volume OEM applications.

Low Voltage Disconnect and Automatic Charging Relay Specification Table

Low Voltage Disconnect (LVD)	Automatic Charging Relays (ACR)						
Senses low battery voltage and disconnects non-critical loads	Allows charging of multiple batteries from a single charge source						
m LVD	m ACR	BatteryLink® ACR	SI ACR	ML Series ACR	ML Series ACR	ML Series ACR	ML Series ACR
							
7635	7601	7611	7610	7620*	7622*	7621*	7623*
--	--	--		--	Yes	--	Yes
12V DC	12V/24V DC	12V/24V DC		12V DC	12V DC	24V DC	24V DC
N/A	N/A	N/A		1,450A DC			
115A DC	115A DC	210A DC		700A DC			
65A DC	65A DC	120A DC		500A DC			
4mA open 95mA connected	15mA open 90mA combined	15mA open 175mA combined		< 13mA			
--	--			< 7.0A DC		< 4.0A DC	
--	--			100,000			
Normally Open	Normally Open			ML Bi-Stable			
SPDT (ON)-OFF-(ON)	--			2146 SPDT ON-OFF-ON			
1/4" Quick Connect	--			Tinned Wire			
#10 or M5	#10 or M5	#8 or M4		#10 or M5			
1/4"-20 (M6)	1/4"-20 (M6)	3/8"-16 (M10)		3/8"-16 (M10)			
7/16" (11 mm)	7/16" (11 mm)	7/8" (22 mm)		7/8" (22 mm)			
60 in-lb (6.8 Nm)	60 in-lb (6.8 Nm)	140 in-lb (15.8 Nm)		140 in-lb (15.8 Nm)			
6 AWG (16 mm²)	6 AWG (16 mm²)	1/0 AWG (50 mm²)		4/0 AWG (120 mm²) × 2			
0.80" (20.3 mm)	0.80" (20.3 mm)	1.05" (26.7 mm)		1.12" (28.4 mm)			
2.85" (72.3 mm)	2.85" (72.3 mm)	3.89" (98.7 mm)		3.75" (95.3 mm)			
2.85" (72.3 mm)	2.85" (72.3 mm)	3.50" (89.0 mm)		5.47" (138.9 mm)			
2.57" (65.2 mm)	2.57" (65.2 mm)	1.98" (50.3 mm)		2.03" (51.6 mm)			
ISO 8046 SAE J1171	ISO 8846 SAE J1171	ISO 8846, UL1500 SAE J1171		ISO 8846, SAE J1171			
IP67 - protected against immersion up to 1 meter for 30 minutes	IP67 - protected against immersion up to 1 meter for 30 minutes			IP66-protected against powerful water jets			

CIRCUIT PROTECTION & SWITCHES

Best practices and ABYC standards recommend every wire on the boat, except the engine starting circuit, have circuit protection.

When excessive current flows in an electrical circuit, wire insulation can melt and possibly start a fire. Circuit breakers and fuses protect the wire in electrical circuits. Blue Sea Systems' vast selection of circuit breakers, fuses, fuse holders, and fuse blocks offer a range of choices for main and branch circuit protection.

To help in the selection process, Blue Sea Systems developed several tools to determine the correct size wire and fuse or circuit breaker for the application. This information is outlined on pages 142-144. These guides will assist with the selection process but are not a substitute for calculations based directly on industry tables, the Blue Sea Systems Circuit Wizard, or as recommended by an ABYC Certified Electrician.



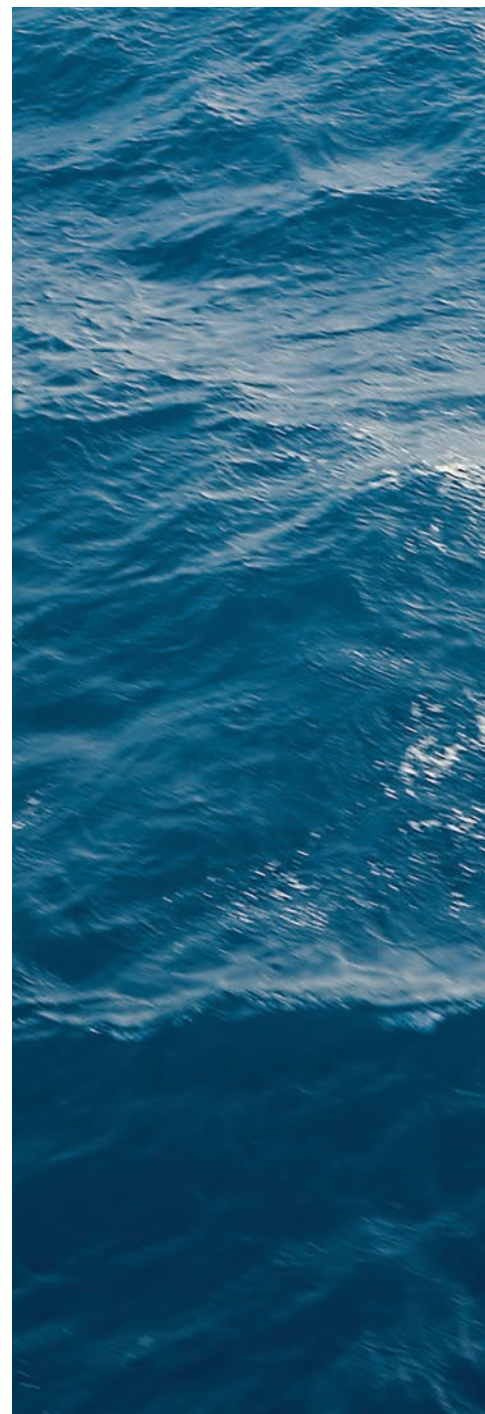
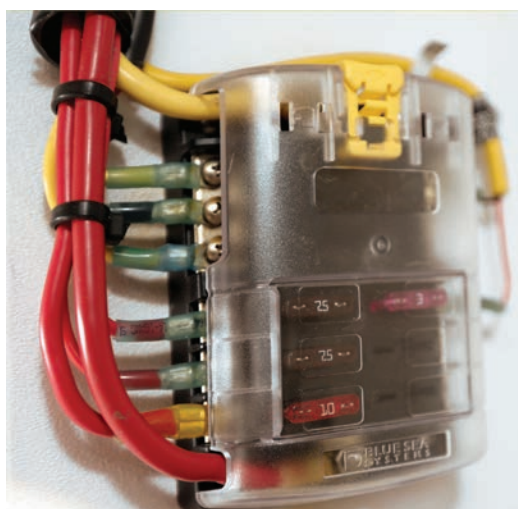
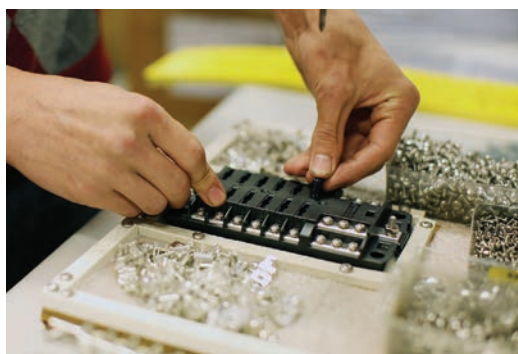
Scan to use the Circuit Wizard

CIRCUIT wizard™

Use the Blue Sea Systems Circuit Wizard to select the correct wire size, circuit breaker, or fuse and fuse holder.
www.circuitwizard.blueseasystems.com

Circuit Wizard App





CIRCUIT PROTECTION & SWITCHES



Fuses	44-47, 58
Fuse Holders	47-48, 58
Fuse Blocks	48-59
Circuit Breaker Blocks	60-61
Circuit Breakers	62-73, 76
Surface Mount Systems	74-75

EdgeWater Boats specifies Blue Sea Systems **ST Blade Fuse Blocks** for circuit protection aboard their sportfishing center consoles, including the high performance 388CC.

TECH tip™

Color Coding Explained

The circuit protection color coded packaging matches fuses with the corresponding fuse holder or fuse block for easier component selection. Look for color rectangles on the packaging of each fuse holder and fuse block, and match the color with the fuse packaging to find the correct fuse type. Some fuse blocks, such as the SafetyHub 150, require two different fuse types. Both color areas are shown on the SafetyHub packaging.

SafetyHub 150 Fuse Block package shows blue ATO® or ATC® and black AMI® or MIDI® rectangles to represent fuse types required



GMA® and AGA® Fuses

Fast-acting glass fuses

- Visible indication of blown condition
- Used for 12V/24V DC applications

Specifications

Blow Time Delay See www.blueseas.com



PN	Fuse Type	Amps	DC Volts	AC Volts	Retail Pack
5280	GMA®	1A	24V DC	250V AC	3
5281	GMA®	2A	24V DC	250V AC	3
5282	GMA®	3A	24V DC	250V AC	3
5283	GMA®	5A	24V DC	125V AC	3
5284	GMA®	7A	24V DC	125V AC	3
5285	GMA®	10A	24V DC	125V AC	3
5275	AGA®	20A	32V DC	---	5

Protect your boat with the correct size wire and fuse, see p. 142-144

AGC® and MDL® Fuses

AGC® – Fast-acting glass fuses

MDL® – Slow blow glass fuses

- Visible indication of blown condition

Specifications

Voltage Max. Operating 32V DC / See table for AC
Blow Time Delay See www.blueseas.com



AGC® Fuses

PN	Amps	Volts	Retail Pack
5201	.25A	250V AC	5
5202	.5A	250V AC	5
5204	1A	250V AC	5
5204100	1A	250V AC	25
5205	1.5A	250V AC	5
5206	2A	250V AC	5
5206100	2A	250V AC	25
5207	2.5A	250V AC	5
5208	3A	250V AC	5
5208100	3A	250V AC	25
5209	4A	250V AC	5
5210	5A	250V AC	5
5210100	5A	250V AC	25
5211	6A	250V AC	5
5212	7A	250V AC	5
5213	7.5A	250V AC	5
5213100	7.5A	250V AC	25
5215	10A	250V AC	5
5215100	10A	250V AC	25
5217	15A	---	5
5217100	15A	---	25
5218	20A	---	5
5218100	20A	---	25
5219	25A	---	5
5219100	25A	---	25
5220	30A	---	5
5220100	30A	---	25
5288	1A, 3A, 5A, 10A, 15A		5
5289	4 each 1A, 2A, 3A, 5A, 7.5A, 10A, 15A, 20A, 25A, 30A		40

MDL® Fuses

PN	Amps	Volts	Retail Pack
5226	3A	250V AC	2
5227	5A	250V AC	2
5228	6.25A	250V AC	2
5229	7.5A	250V AC	2
5230	10A	---	2
5231	15A	---	2
5232	20A	---	2
5233	25A	---	2
5234	30A	---	2



5289
Includes a Heavy Duty In-Line Fuse Holder 5063 p. 47

Protect your boat with the correct size wire and fuse, see p. 142-144

Related Products



AGC® or MDL®
In-Line fuse holders
p. 47



ST-Glass Fuse Blocks
p. 48

ATM® Fuses

Mini blade-type fuse

- Color-coded for easy identification
- Visible indication of blown condition
- Tin-plated connector blades for corrosion resistance



Specifications

Interrupting Capacity	1,000A
Voltage Max. Operating	32V DC
Blow Time Delay	See www.bluesea.com

PN	Amps	Retail Pack
5270	5A	2
5271	10A	2
5272	15A	2
5273	20A	2
5274	30A	2
5286	5A, 10A, 15A, 20A, 30A	5

ATO® or ATC® Fuses

Fast-acting blade fuse

- Color-coded for easy identification
- Visible indication of blown condition
- Tin-plated connector blades for corrosion resistance



Specifications

Interrupting Capacity	1,000A
Voltage Max. Operating	32V DC
Blow Time Delay	See www.bluesea.com

PN	Amps	Retail Pack	PN	Amps	Retail Pack
5235	1A	2	5235100	1A	25
5236	2A	2	5236100	2A	25
5237	3A	2	5237100	3A	25
5238	4A	2	5239100	5A	25
5239	5A	2	5240100	7.5A	25
5240	7.5A	2	5241100	10A	25
5241	10A	2	5242100	15A	25
5242	15A	2	5243100	20A	25
5243	20A	2	5244100	25A	25
5244	25A	2	5245100	30A	25
5245	30A	2			
5246	40A	2			
5287	5A, 10A, 15A, 20A, 25A, 30A	6			

Protect your boat with the correct size wire and fuse, see p. 142-144

Related Products



Fuse Holders
p. 47



ST-Blade
Fuse Blocks
p. 49-53



SafetyHub
Fuse Blocks
p. 57



WeatherDeck®
Waterproof
Fuse Panels
p. 96

easyID™ ATC® Fuses

Fast-acting easyID™ illuminated blade fuses use Light Emitting Diode (LED) technology to show when a fuse has blown.

- Color-coded for easy identification
- Visible indication of blown condition
- Tin-plated connector blades for corrosion resistance



Specifications

Interrupting Capacity	1,000A
Voltage Max. Operating	32V DC
Blow Time Delay	See www.bluesea.com

PN	Amps	Retail Pack
5291	3A	2
5292	5A	2
5293	7.5A	2
5294	10A	2
5295	15A	2
5296	20A	2
5297	25A	2
5298	30A	2
5299	40A	2
5290	3x 3A, 3x 5A, 3x 7.5A, 3x 10A, 6x 15A, 3x 20A, 3x 25A, 3x 30A, 3x 40A	30



5290

Related Products



Fuse Holders
p. 47



ST-Blade
Fuse Blocks
p. 49-53



SafetyHub
Fuse Blocks
p. 57



WeatherDeck®
Waterproof
Fuse Panels
p. 96

MAXI® Fuses

Provides economical branch circuit protection

- Color-coded for easy identification
- Silver-plated connector blades for corrosion resistance
- Visible indication of blown condition



Specifications

Interrupting Capacity	1,000A
Voltage Max. Operating	32V DC
Blow Time Delay	See www.bluesea.com

PN	Amps	Retail Pack
5138	30A	1
5139	40A	1
5140	50A	1
5141	60A	1
5142	70A	1
5143	80A	1

Related Products



MAXI® Fuse Block
p. 48



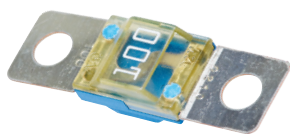
MAXI® In-Line
Fuse Holder
p. 48

Protect your boat with the correct size wire and fuse, see p. 142-144

AMI® or MIDI® Fuses

Compact fuse for main or branch
30A to 200A circuit protection

- Color-coded for easy identification
- Visible indication of blown condition
- Tin-plated connector blades for corrosion resistance



Specifications

Interrupting Capacity	5,000A @ 16V DC 2,000A @ 32V DC
Voltage Max. Operating	32V DC

Regulatory

Meets SAE J1171 external ignition protection requirements when used with Blue Sea Systems' Fuse Blocks

IP66 – protected against powerful water jets (see inside back cover)

PN	Amps	Color	Retail Pack
5250	30A	Orange	2
5251	40A	Green	2
5252	50A	Red	2
5253	60A	Yellow	2
5254	70A	Brown	2
5255	80A	White	2
5256	100A	Blue	2
5257	125A	Pink	2
5258	150A	Lt Blue	2
5259	175A	Tan	2
5260	200A	Purple	2

Related Products



Safety Fuse Block
p. 56



SafetyHub Fuse Blocks
p. 57

MEGA® or AMG® Fuses

Economical fuse for 100A to
300A circuit protection



Specifications

Interrupting Capacity	2,000A @ 32V DC
Voltage Max. Operating	32V DC
Trip Time Delay	See www.blueseasea.com

Regulatory

Meets SAE J1171 external ignition protection requirements

When used with Blue Sea Systems' Safety Fuse Block 7721 (p. 56)

IP66 – protected against powerful water jets (see inside back cover)

PN	Amps	Retail Pack
5101	100A	1
5102	125A	1
5103	150A	1
5104	175A	1
5105	200A	1
5107	250A	1
5108	300A	1

Protect your boat with the correct size wire and fuse, see p. 142-144

Related Products



MEGA® or AMG® Fuse Block
p. 54



Safety Fuse Block
MEGA® or AMG® 7721
p. 56

Terminal Fuses

MRBF—Marine Rated Battery Fuse

Space-saving ignition protected fuse for 30 to 300 Amp loads. Must use with Terminal Fuse Block (p. 54)



- Color-coded for easy identification
- Visible indication of blown condition

Specifications

Interrupting Capacity	10,000A @ 14V DC 5,000A @ 32V DC 2,000A @ 58V DC
Voltage Max. Operating	58V DC
Fuse Hole Opening	M8 (5/16")
Trip Time Delay	See www.blueseasea.com

Regulatory

Meets SAE J1171 external ignition protection requirements

IP66 – protected against powerful water jets (see inside back cover)

ABYC E-11.10.1.1.1. Overcurrent Protection Device Location - Ungrounded conductors shall be provided with overcurrent protection within a distance of seven inches (175mm) of the point at which the conductor is connected to the source of power measured along the conductor

PN	Amps	Color	Retail Pack
5175	30A	LT Green	1
5176	40A	LT Blue	1
5177	50A	Red	1
5178	60A	Gold	1
5180	75A	Brown	1
5181	80A	Lime	1
5182	90A	Purple	1
5183	100A	Yellow	1
5184	125A	Green	1
5185	150A	Orange	1
5186	175A	White	1
5187	200A	Blue	1
5189	250A	Pink	1
5190	300A	Gray	1

Protect your boat with the correct size wire and fuse, see p. 142-144

Related Products



MRBF® Fuse Blocks
p. 54

Class T Fuses

High interrupt capacity for large battery banks including Lithium-Ion and TPPL batteries

- Extremely fast short-circuit response
- Recommended by most inverter manufacturers



Specifications

Interrupting Capacity 20,000A @ 160V DC
Voltage Max. Operating 160V DC
Trip Time Delay See www.bluesea.com

Regulatory

UL listed to standard 248-15

PN	Amps	Retail Pack
5117	225A	1
5118	250A	1
5119	300A	1
5120	350A	1
5121	400A	1

Related Products



Class-T Fuse Block
p. 55

ANL Fuses

For 35A to 750A circuit protection

- Silver-plated connector blades for corrosion resistance
- Visible indication of blown condition



Specifications

Interrupting Capacity 6,000A @ 32V DC
Voltage Maximum Operating 32V DC
Trip Time Delay See www.bluesea.com

Regulatory

35-500A ONLY – Meets SAE J1171 external ignition protection requirements

PN	Amps	Retail Pack	PN	Amps	Retail Pack
5164	35A	1	5129	200A	1
5165	40A	1	5131	250A	1
5122	50A	1	5133	300A	1
5123	60A	1	5135	350A	1
5124	80A	1	5136	400A	1
5125	100A	1	5137	500A	1
5126	130A	1	5161	600A	1
5127	150A	1	5163	750A	1
5128	175A	1			

Protect your boat with the correct size wire and fuse, see p. 142-144

Related Products



ANL Fuse Blocks
p. 55

AGC® or MDL® In-Line Fuse Holders

Crimpable In-Line Fuse Holder

- Accepts 12-16 AWG wire
- 30A Max. fuse amperage
- Fuse sold separately (p. 44)



5060

Waterproof In-Line Fuse Holder

- Accepts 12-18 AWG wire
- 30A Max. fuse amperage
- Fuse sold separately (p. 44)



5061

Waterproof In-Line Fuse Holder

- Accepts 12-16 AWG wire
- 20A Max. fuse amperage
- Fuse sold separately (p. 44)



5062

Heavy Duty In-Line Fuse Holder

- Supplied with tinned copper 12 AWG pigtails
- 30A Max. fuse amperage
- Fuse sold separately (p. 44)



5063

Water Resistant Fuse Holder

Panel Mount

- Rated IP66 on front – protected against powerful water jets
- 20A Max. fuse amperage
- 0.50" (12.70 mm) mounting hole
- Fuse sold separately (p. 44)
- 5022 Replacement cap for 5021



5021

5022

Related Products



AGC® Fuses
p. 44



MDL® Fuses
p. 44

ATO® or ATC® In-Line Fuse Holders

In-Line Fuse Holder

- Supplied with 12 AWG pigtails
- 30A Max. fuse amperage
- Fuse sold separately (p. 45)



5064

Waterproof In-Line Fuse Holder

- Supplied with 12 AWG pigtails
- 30A Max. fuse amperage
- Fuse sold separately (p. 45)



5065

Related Products



ATO® or ATC® Fuses
p. 45



easyID ATC® Fuses
p. 45

MAXI® In-Line Fuse Holder

In-line fuse holder
for MAXI® Fuses



- Supplied with 5 inch #6 lead wires and two adhesive lined sealing shrink wrap tubes for sealed terminations
- Firewall mounting hole permits two or more holders to be mounted together
- Protective cover with retaining strap
- Fuse sold separately (p. 45)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Continuous	48A
Fuse Max. Amperage	60A
Mounting Hole	1/4", M6, or #12 Screws

PN Description

5068	In-Line MAXI Fuse Holder
------	--------------------------

MAXI® Fuse Block

Screw termination accepts wire
sizes from 18 AWG to 4 AWG

- Snap-on terminal cover insulates all conductive parts, satisfying ABYC/USCG requirements
- Accepts wire sizes 18-4 AWG from sides or bottom
- Terminal screws compress fuse blades within blocks for low resistance connections
- Fuses sold separately (p. 45)

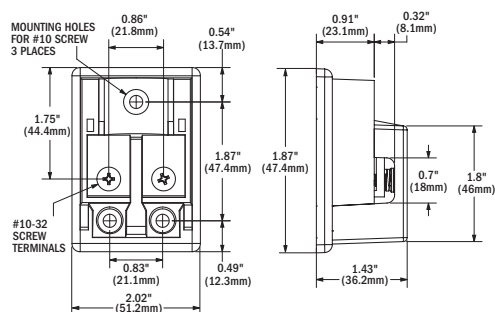


Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	80A
MAXI® Fuses available	30A-80A
Mounting	#10 Screws

PN Description

5006	MAXI® Fuse Block
------	------------------



Related Products



MAXI® Fuses
p. 45

ST Glass Fuse Blocks

Innovative design allows for labeling, spare fuse storage, and easy fuse removal



5015

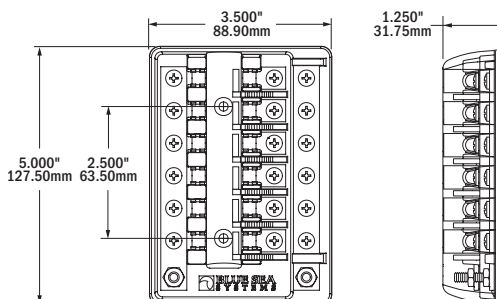
- Can be used for 24-hour circuits
- Screw terminals for securing wires
- Integrated fuse ejector levers
- Clear insulating cover satisfies ABYC/USCG insulation requirements, accepts large format labels (p. 138-141), and provides storage for spare fuses
- Tin-plated phosphor bronze fuse clips are encapsulated and cannot be sprung
- One-piece stainless flange nuts ensure safe and secure connections
- Fuses sold separately (p. 44)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit
Amperage Max. Operating	100A per block
Fuse Type	AGC® or MDL® Fuses
Screw Terminal	#8-32 with captive star lock washer
Mounting	#8 Screw (M4)

PN Circuits Tin-plated copper negative bus

5015	6	#10-32 stud
5018	6	--



Related Products



AGC® Fuses
p. 44



MDL® Fuses
p. 44

ST Blade Battery Terminal Mount Fuse Block

Easily add 4 fused circuits to the terminal of a battery. Provides power to new accessories in your boat or vehicle.



- Mounts on the battery terminal stud
- Screw terminals for securing wires
- Nylon insulated ring terminals included for each screw terminal
- Accepts small format circuit labels
- Insulating cover meets ABYC/USCG insulation requirements
- Ignition Protected - for use in a gasoline engine compartment
- Includes write-on circuit labels
- Includes four 16-14 AWG and four 12-10 AWG Nylon insulated ring terminals
- Fuses sold separately (p. 45)

ST Blade Battery Terminal Mount Fuse Block

Specifications

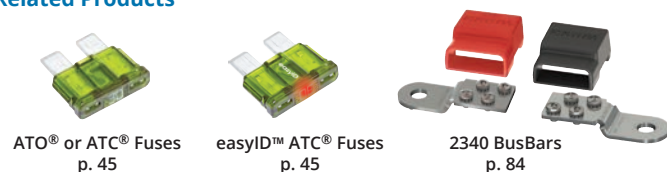
Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit
Amperage Max. Operating	100A per block
Fuse Type	ATO® or ATC® Fuses
Bus Material	Tin-Plated Copper C11000
Mounting Thru-hole	Clearance for 3/8" [M10] stud
Screw Terminal	#8-32 Screws with captive star lock washer

Regulatory

Meets ISO 8846 and SAE J1171 external ignition protection requirements

PN	Description
5023	ST-Blade Battery Terminal Mount Fuse Block

Related Products



ST Blade Battery Terminal Mount Fuse Block Kit



Easily add 4 fused circuits to the terminal of a battery. Provides power to new accessories in your boat or vehicle.



5024

- Mounts on the battery terminal stud
- Screw terminals for securing wires
- Nylon insulated ring terminals included for each screw terminal
- Accepts small format circuit labels
- Insulating cover meets ABYC/USCG insulation requirements
- Ignition Protected - for use in a gasoline engine compartment
- Includes a 4-circuit negative busbar
- Includes write-on circuit labels
- Includes four 16-14 AWG and four 12-10 AWG Nylon insulated ring terminals
- Fuses sold separately (p. 45)

ST Blade Battery Terminal Mount Fuse Block

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit
Amperage Max. Operating	100A per block
Fuse Type	ATO® or ATC® Fuses
Bus Material	Tin-Plated Copper C11000
Mounting Thru-hole	Clearance for 3/8" [M10] stud
Screw Terminal	#8-32 Screws with captive star lock washer

Regulatory

Meets ISO 8846 and SAE J1171 external ignition protection requirements

Battery Terminal Mount BusBar

Specifications

Continuous Rating	100A DC
Voltage Max. Operating	32V DC
Bus Material	Tin-Plated Copper C11000
Mounting Thru-hole	Clearance for 3/8" [M10] stud
Screw Terminal	#8-32 Screws with captive star lock washer

PN	Description
5024	ST-Blade Battery Terminal Mount Fuse Block Kit

ST Blade Fuse Blocks

Independent Source

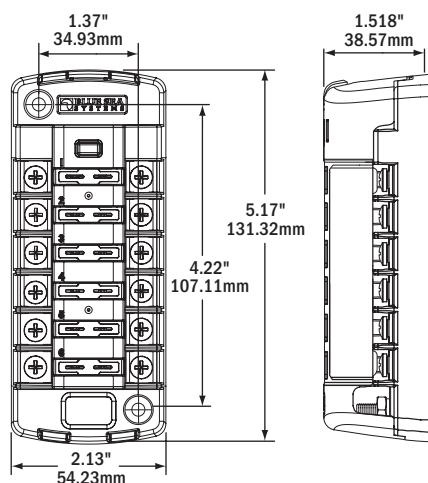
ATO®/ATC® fuse block consolidates branch circuits and eliminates in-line fuses

- Independent source fuse block
- Can be used for 24-hour circuits and switched circuit in same block
- Screw terminals for securing wires accept ring terminals
- Clear insulating cover with label recesses and storage for one fuse, satisfies ABYC/USCG insulation requirements
- Easy to open, push button latch for easy access to fuses
- Tin-plated copper buses and fuse clips
- Fuse Block with cover includes 20 write-on circuit labels and two Terminal Block Jumpers PN 9217
- Small format standard and custom labels available
- Fuses sold separately (p. 45)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit
Amperage Max. Operating	40A per jumped circuit group
Fuse Type	ATO® or ATC® Fuses
Screw Terminal	#8-32 Screws with captive star lock washer
Mounting	#8 Screw (M4)

PN	Circuits	Cover
5035	6	Yes
5037	6	-



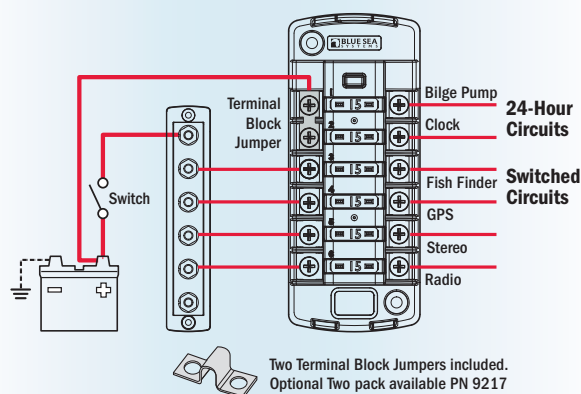
5035



5037

Application Diagram

Two 24-Hour Circuits and Four Switched Circuits



Related Products



ATO® or ATC® Fuses
p. 45



easyID™ ATC® Fuses
p. 45



Terminal Block Jumpers
p. 87

ST Blade Split Bus Fuse Block

VIDEO ▶

Common and/or Independent Source

Two isolated 6-circuit fuse blocks with a negative bus.
For use when a mix of switched and 24-hour circuits are desired
in the same block

- Common and/or independent source fuse block
- Provides two isolated groups of six ATO®/ATC® circuits
- For use with either two isolated batteries or with a single battery providing a mix of 24-hour and switched circuits
- Clear insulating cover satisfies ABYC/USCG insulation requirements and provides storage for two spare fuses
- Accepts ring terminals
- Easy to open, push button latch provides easy access to fuses
- Tin-plated copper buses and fuse clips
- Includes 20 write-on circuit labels
- Fuses sold separately (p. 45)

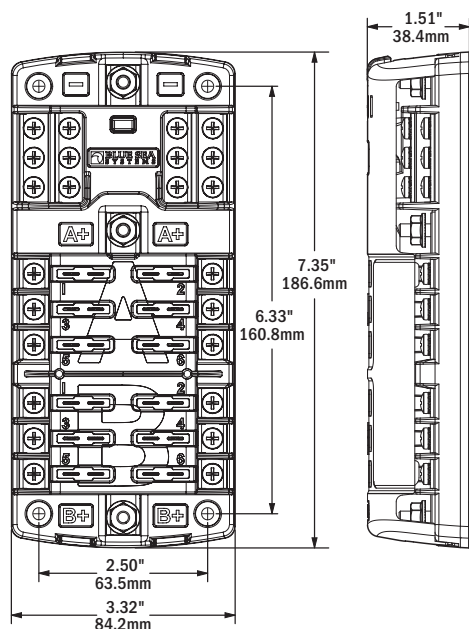
Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit 100A total (not to exceed 80A per load group)
Fuse Type	ATO® or ATC® Fuses
Screw Terminal	#8-32 Screws with captive star lock washer
Mounting	#8 Screw (M4)
Recommended Wire Size	Positive Feed: 4-6 AWG (25-16 mm²) Branch Circuits: 10-16 AWG (6-15 mm²)
Recommended Torque	#10 Stud: 24 in-lb (2.71 N-m) #8 Screw: 18 in-lb (2.03 N-m)



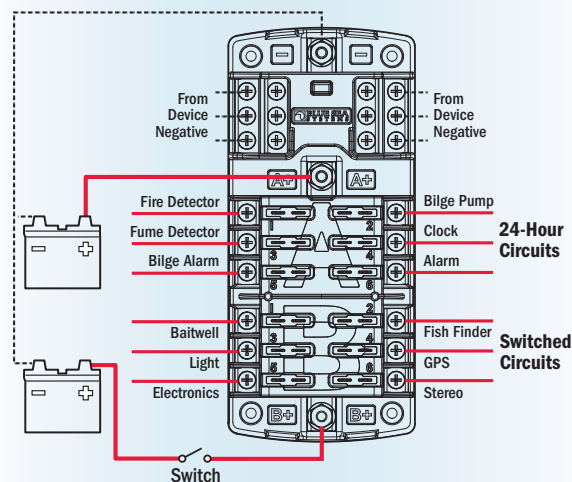
5032

PN	Circuits	Cover	Negative Bus	Positive Bus
5032	12	Yes	#10-32 stud	#10-32 stud



Application Diagram

Six 24-Hour Circuits and Six Switched Circuits



Related Products



ATO® or ATC® Fuses
p. 45



easyID™ ATC® Fuses
p. 45

ST Blade Compact Fuse Blocks **NEW**

Common Source

Provides surface mount circuit protection for ATO®/ATC® Fuses in a compact footprint. The single side design allows wire entry from one side to maximize space.

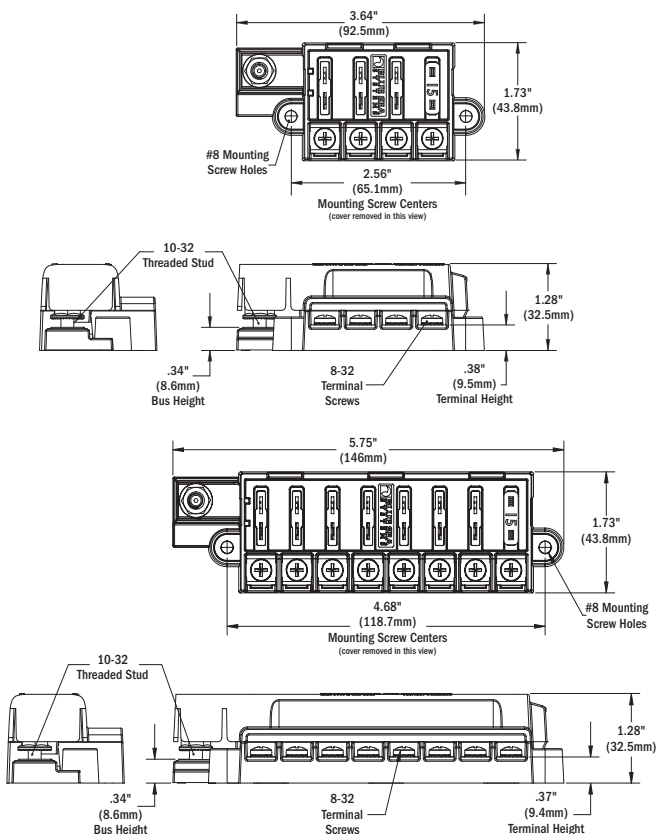
- Compact common source fuse block
- Accepts ATO® and ATC® fast acting blade fuses
- Single side entry wiring
- Ignition Protected—meets ISO 8846 and SAE J1171 for use in a gasoline engine compartment
- Insulating cover meets ABYC/USCG insulation requirements
- Tin-plated copper buses and fuse clips
- Accepts ring or snap fork type terminals
- Small format standard and custom labels available
- Fuses sold separately (p. 45)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit
Amperage Max. Operating	100A per block
Fuse Type	ATO® or ATC® Fuses
Screw Terminal	#8-32 Screws with captive star lock washer
Mounting	#8 Screw (M4)

PN	Circuits	Cover
5045	4	Yes
5046	8	Yes

Specifications subject to change. See bluesea.com for current information.



Related Products



ATO® or ATC® Fuses
p. 45

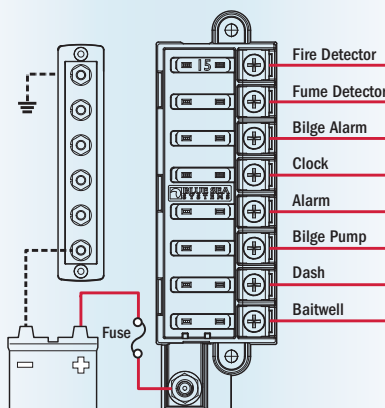


easyID™ ATC® Fuses
p. 45



Application Diagram

Eight 24-Hour Circuits



ST Blade Common Source Fuse Blocks

Common Source

Fuse block consolidates branch circuits and in-line fuses

- Common source fuse block
- Screw terminals for securing wires accept ring terminals
- One-piece stainless flange nuts ensure safe and secure connections
- Clear insulating cover with label recesses and storage for two fuses, satisfies ABYC/USCG insulation requirements
- Easy to open, push button latch for easy access to fuses
- Tin-plated copper buses and fuse clips
- Fuse blocks with covers include 20 write-on circuit labels small format standard and custom labels available
- Fuses sold separately (p. 45)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	30A per circuit
Amperage Max. Operating	100A per block
Fuse Type	ATO® or ATC® Fuses
Screw Terminal	#8-32 Screws with captive star lock washer
Mounting	#8 Screw (M4)

PN	Circuits	Cover	Negative Bus	Positive Bus	[A] Width in (mm)	[B] Mounting Centers in (mm)	[C] Height in (mm)	[D] Mounting Centers in (mm)
5025	6	Yes	#10-32 stud	#10-32 stud	3.32 (84.20)	2.50 (63.50)	4.89 (124.31)	3.88 (95.58)
5028	6	Yes	--	#10-32 stud	3.32 (84.20)	2.50 (63.50)	3.65 (92.76)	2.64 (67.03)
5030	6	--	#10-32 stud	#10-32 stud	3.32 (84.20)	2.50 (63.50)	4.89 (124.31)	3.88 (95.58)
5033	6	--	--	#10-32 stud	3.32 (84.20)	2.50 (63.50)	3.65 (92.76)	2.64 (67.03)
5026	12	Yes	#10-32 stud	#10-32 stud	3.32 (84.20)	2.50 (63.50)	6.47 (164.39)	5.46 (138.66)
5029	12	Yes	--	#10-32 stud	3.32 (84.20)	2.50 (63.50)	5.23 (132.84)	4.22 (107.11)
5031	12	--	#10-32 stud	#10-32 stud	3.32 (84.20)	2.50 (63.50)	6.47 (164.39)	5.46 (138.66)
5034	12	--	--	#10-32 stud	3.32 (84.20)	2.50 (63.50)	5.23 (132.84)	4.22 (107.11)



5028 with cover
5033 without cover



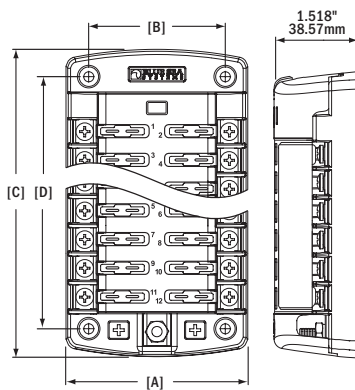
5025 with cover
5030 without cover



5029 with cover
5034 without cover

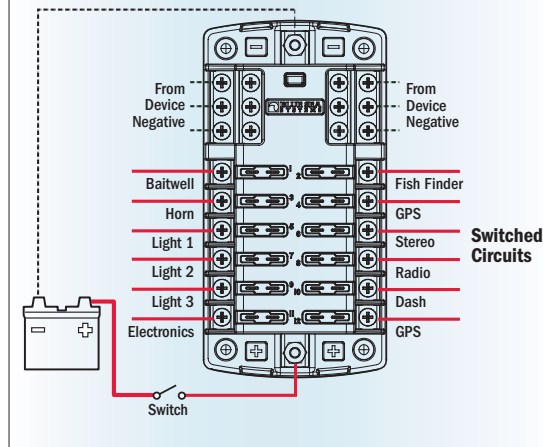


5026 with cover
5031 without cover



Application Diagram

Twelve Switched Circuits



Related Products



ATO® or ATC® Fuses
p. 45



easyID™ ATC® Fuses
p. 45



WeatherDeck® Switch Only
p. 96

Terminal Fuse Blocks

MRBF—Marine Rated Battery Fuse

Satisfies ABYC 7" circuit protection rule by mounting on a 3/8" battery post, battery switch, or bus bar



- Appropriate for DC Main, inverter, windlass, and bow thruster circuit protection
- Weatherproof – suitable for small open-cockpit boats and other harsh environments
- Insulating cap prevents accidental shorts
- Fuses sold separately (p. 46)

Specifications

Voltage Max. Operating	58V DC
Amperage Max. Operating	300A
Terminal Fuses Available	30–300 Amps

Regulatory

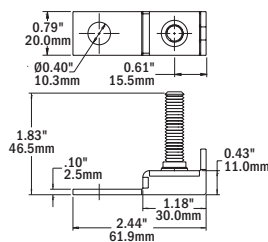
Meets SAE J1171 external ignition protection requirements

PN	Terminal Stud Size	Mounting Hole	Fuses
5191	M8 (5/16"-18)	3/8"	1
2151	M8 (5/16"-18)	3/8"	2

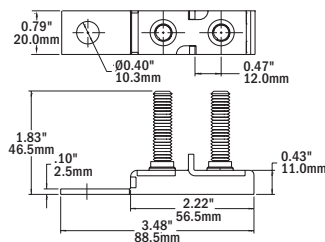
Related Products



Terminal MRBF Fuses
p. 46



5191



2151

MEGA® or AMG® Fuse Block

Provides an economical system for 100 to 300 Amp fusing

- Insulating cover with breakouts satisfies ABYC/USCG insulation requirements
- Stainless steel studs provide resistance to corrosion and allow high torque
- UL 94-V0 base resists high heat
- Fuses sold separately (p. 46)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	300A
Wire Size to Meet Rating	4/0 AWG (120mm²)
Fuses available	100–300 Amps



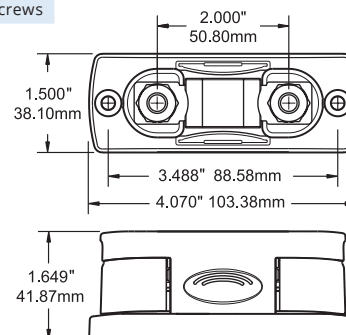
5001

PN	Terminal Stud Size	Mounting
5001	5/16"-18 (M8)	#10 (M5) Screws

Related Products



MEGA® or AMG®
Fuses p. 46



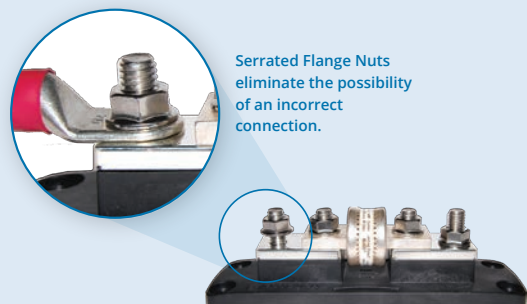
TECH tip™

Serrated Flange Nuts Explained

Ensuring a secure and correct connection

Blue Sea Systems is now shipping product with serrated flange nuts which replace the more traditional nut and split washer. The one-piece serrated flange nut ensures correct and secure wire termination.

- Large base requires a greater amount of torque to loosen than to tighten the nut
- Enlarged circular base distributes heavy pressure equally in order to assure a secure hold



Class T Fuse Block

Allows use of Class T fuses for fast acting circuit protection of inverters



5502

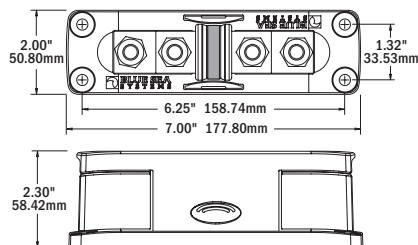
NOTE:
5502 replaces 5002

- Four stud design provides ample access around connecting stud to install large cable lugs without obstruction from the fuse
- Accepts 3/8" (M10) ring terminals
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- Insert molded studs ensure secure fuse mounting
- Stainless steel studs provide resistance to corrosion and high torque
- One-piece stainless flange nuts ensure safe and secure connections
- UL 94-V0 base resists high heat
- Fuse sold separately (p. 47)

Specifications

Voltage Max. Operating	160V DC
Amperage Max. Operating	400A
Cable Size	Up to 4/0 AWG (120 mm ²)
Fuse Mounting Blocks	Tin-Plated Copper
Class T Fuses available	225–400 Amps

PN	Terminal Stud Size	Mounting
5502	3/8"-16 (M10)	1/4" (M6) Screws



Related Products



Class T Fuses
p. 47

ANL® Fuse Blocks

Accepts a wide range of ANL fuse amperages for versatile fusing



5005



5503

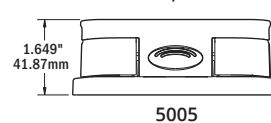
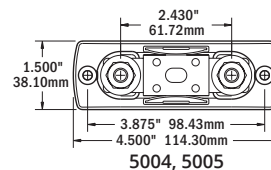
NOTE:
5503 replaces 5003

- Swing out design allows replacement of the fuse without removing fasteners
- Accepts 5/16" (M8) ring terminals
- Insulating cover satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in any direction
- Insert molded studs ensure secure fuse mounting
- Stainless steel studs provide resistance to corrosion and high torque
- One-piece stainless flange nuts ensure safe and secure connections
- UL 94-V0 base resists high heat
- Fuse sold separately (p. 47)

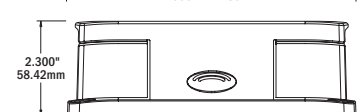
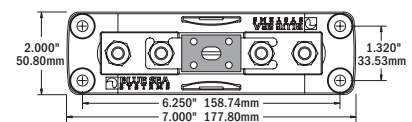
Specifications

	5503	5005
Voltage Max. Operating	32V DC	32V DC
Terminal Stud Size	5/16"-18 (M8)	5/16"-18 (M8)
Cable Size	Up to 4/0 AWG	Up to 2/0 AWG
Fuse Mounting Blocks	Tin-Plated Copper	Tin-Plated Copper
ANL Fuses Available	35–750 Amps	35–300 Amps

PN	Terminal Stud Size	Amperage Max. Operating	Mounting Holes Accept
5005	5/16"-18 (M8)	300A	#10 (M5) Screw
5503	5/16"-18 (M8)	750A	1/4" (M6) Screw



5005



5503

Related Products



ANL® Fuses
p. 47

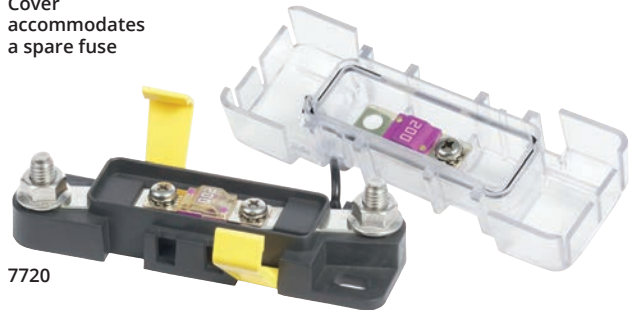
Safety Fuse Block



AMI® or MIDI®

Ignition protected for use on gasoline powered boats with 30A to 200A circuits

Cover accommodates a spare fuse



7720

- Sealed cover protects fuses from the harsh marine environment and satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in three directions
- One-piece stainless flange nuts ensure safe and secure connections
- Accepts square format standard or custom label
- Fuses sold separately (p. 46)

Specifications

Voltage Max. Operating	32V DC
Wire Size to Meet Rating	2/0 AWG (70 mm ²)
Mounting holes	Accept 1/4" (M6) Screws
Terminal Stud Size	M8
Terminal Screw Size	M5 Stainless Steel

Regulatory

CE marked
Meets ISO 8846 and SAE J1171 external ignition protection requirements when cover is secure
IP66 – protected against powerful water jets (see inside back cover)

PN	Fuse Type	Amperage Max. Operating
7720	AMI® or MIDI®	200A

Related Products



AMI® or MIDI® Fuses
p. 46

TECH tip™

Ignition Protection Explained

Safety and SafetyHub Fuse Blocks

Safety Fuse Block products are designed and tested for ignition protection, enabling them to be installed in a compartment where gasoline or other explosive fumes may be present.

The U.S. Coast Guard states:

An electrical component that is "ignition protected" is capable of operating in an explosive environment without igniting that environment. "Ignition protection" of electrical devices is accomplished by the use of seals, flame arrestors and potting (sealing), or a combination of such means.

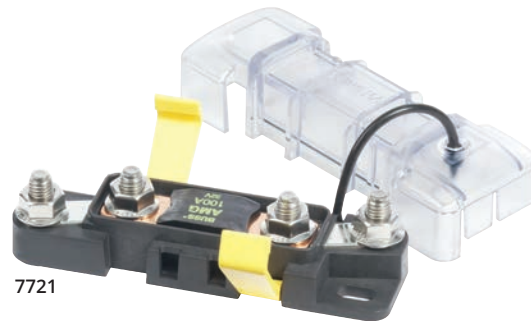
The Safety Fuse Blocks include the Safety AMI® or MIDI®, and Safety MEGA® or AMG®, SafetyHub 100, SafetyHub 150, and all meet the U.S. Coast Guard ignition protection requirements.

Safety Fuse Block



MEGA® or AMG®

Ignition protected for use on gasoline powered boats with 30A to 300A circuits



7721

- Sealed cover protects fuses from the harsh marine environment and satisfies ABYC/USCG insulation requirements
- Cover breakouts allow wire access in three directions
- One-piece stainless flange nuts ensure safe and secure connections
- Accepts square format standard or custom label
- Fuses sold separately (p. 46)

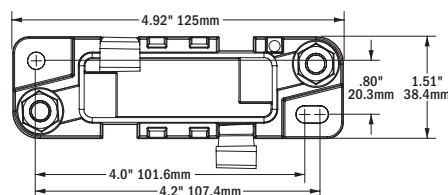
Specifications

Voltage Max. Operating	32V DC
Wire Size to Meet Rating	2/0 AWG (70 mm ²)
Mounting holes	Accept 1/4" (M6) Screws
Terminal Stud Size	M8

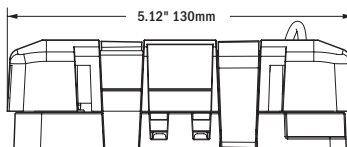
Regulatory

CE marked
Meets ISO 8846 and SAE J1171 external ignition protection requirements when cover is secure
IP66 – protected against powerful water jets (see inside back cover)

PN	Fuse Type	Amperage Max. Operating
7721	MEGA® or AMG®	300A



7720 and 7721 DIMENSIONS



7720 and 7721 COVER FRONT

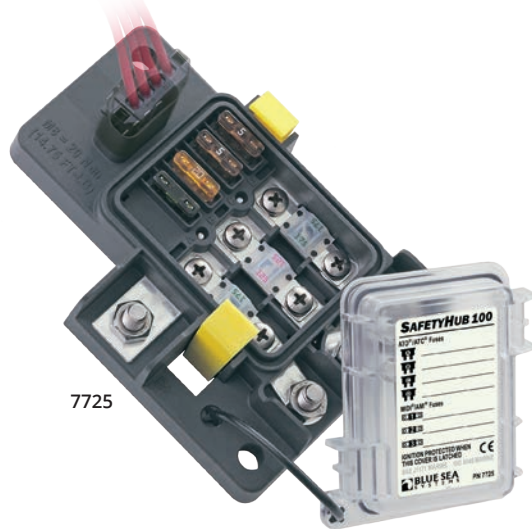
Related Products



MEGA® or AMG® Fuses
p. 46

SafetyHub 100 Fuse Block

The SafetyHub 100 combines an ignition protected fuse block and integrated connecting plugs. It is safe for use on gasoline powered boats, reduces wiring connections, and consolidates up to seven fused circuits.



7725

- Accepts three MIDI® or AMI® Fuses for high-amp circuits including panel feeds, windlasses, and stereo amplifiers
- Accepts four ATO® or ATC® Fuses for circuits including bilge pumps, electronics and lights
- Sealed cover protects fuses from the harsh marine environment and satisfies ABYC/USCG insulation requirements
- Integrated connector plug eliminates loose wires and provides a secure, waterproof connection
- Fuses sold separately (p. 45-46)

Specifications

Amperage Max. Operating (combined)	280A
Voltage Nominal Operating	12V DC
Minimum Cable Size to Meet Ratings	4/0 AWG (120 mm²)
Recommended Ring Terminal	M8 (5/16")

MIDI® or AMI® Fuse Block

Amperage Max. Operating (per block)	240A [†]
Amperage Max. Operating (per circuit)	170A [†]
Fuse Amperages Available	30–200A
Minimum Cable Size to Meet Ratings	2/0 AWG (70 mm²)

ATO® or ATC® Fuse Block

Amperage Max. Operating (per block)	50A [†]
Amperage Max. Operating (per circuit)	20A [†]
Fuse Amperages Available	1A–20A

Regulatory

CE marked

Meets ISO 8846 and SAE J1171 external ignition protection requirements when cover is secure

IP66 – protected against powerful water jets

[†] Ratings are dependent on input cable sized for appropriate amperages

PN	Description
7725	SafetyHub 100

Related Products



ATO® or ATC® Fuses
p. 45



easyID™ ATC® Fuses
p. 45

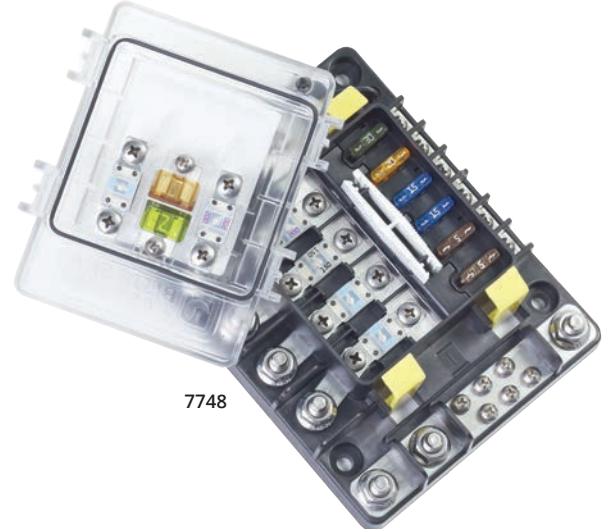


AMI® or MIDI® Fuses
p. 46

SafetyHub 150 Fuse Block

VIDEO

The SafetyHub 150 is an ignition protected fuse block with screw termination. It is safe for use on gasoline powered boats, reduces wiring connections, and consolidates up to ten fused circuits.



7748

- Accepts four AMI® or MIDI® Fuses for high-amp circuits including panel feeds, windlasses, and stereo amplifiers
- Accepts six ATO® or ATC® Fuses for circuits including bilge pumps, electronics and lights
- Sealed cover protects fuses from the harsh marine environment and satisfies ABYC/USCG insulation requirements
- Negative bus provides common location for negative connection
- Circuit identification label with write-on capability
- Fuse puller to remove ATO® or ATC® Fuses
- Cover provides storage space for spare fuses and mounting screws
- One-piece stainless flange nuts ensure safe and secure connections
- Fuses sold separately (p. 45-46)

Specifications

Amperage Max. Operating (combined)	280A
Voltage Max. Operating	32V DC
Minimum Cable Size to Meet Ratings	4/0 AWG (120 mm²)
Recommended Ring Terminal	M8 (5/16")
Stud Size	M8

MIDI® or AMI® Fuse Block

Amperage Max. Operating (per block)	280A [†]
Amperage Max. Operating (per circuit)	170A [†]
Fuse Amperages Available	30A–200A
Minimum Cable Size to Meet Ratings	2/0 AWG (70 mm²)
Screw Size	M5

ATO® or ATC® Fuse Block

Amperage Max. Operating (per block)	50A [†]
Amperage Max. Operating (per circuit)	25A [†]
Fuse Amperages Available	1A–30A
Screw Size	#8-32

Regulatory

CE marked

Meets ISO 8846 and SAE J1171 external ignition protection requirements when cover is secure








IP66 – protected against powerful water jets

[†] Ratings are dependent on input cable sized for appropriate amperages





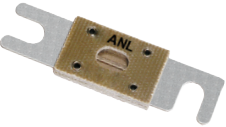
PN	Description
7748	SafetyHub 150

Fuse and Fuse Holder Specification Table








DC Fuses*

Product	GMA®	AGA®	AGC®	MDL®	ATM®	ATO® or ATC®	easyID™	MAXI®
	AC/DC		AC/DC	AC/DC				
								
Page Number	44	44	44	44	45	45	45	45
Interrupting Capacity DC	-	-	-	-	1,000A DC	1,000A DC	1,000A DC	1,000A DC
Maximum Voltage DC	24V DC	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC
Maximum Voltage AC	5-10A: 125V AC 1-3A: 250V AC	-	.25-10A: 250V AC	3-7.5A: 250V AC	--	--	--	--
Amperage Range	1-10A	20A	.25-30A	3-30A	5-30A	1-30A	3-40A	30-80A
Quantity Per Package	3	5	5 or 25	2	2	2 or 25	2	1
Regulatory	--							

* Certain amperages of GMA®, AGC®, and MDL® fuses are AC/DC rated. See product page for specific ratings








Product	Terminal (MRBF)	AMI® or MIDI®	MEGA® or AMG®	Class T	ANL®
					
Page Number	46	46	46	47	47
Interrupting Capacity	10,000A @ 14V DC 5,000A @ 32V DC 2,000A @ 58V DC	5,000A @ 16V DC 2,000A @ 32V DC	2,000A @ 32V DC	20,000A @ 160V DC	6,000A @ 32V DC
Maximum Voltage	58V DC	32V DC	32V DC	160V DC	32V DC
Amperage Range	30-300A	30-200A	100-300A	225-400A	35-750A
Quantity Per Package	1	2	1	1	1
Regulatory	SAE J1171 IP66 – protected against powerful water jets	ISO 8846 and SAE J1171 when used with Blue Sea Systems' SafetyHubs and Safety Fuse Block PN 7720	ISO 8846 and SAE J1171 when used with Blue Sea Systems' Safety Fuse Block PN 7721	--	35-500A Meets ISO 8846 and SAE J1171






DC In-Line Fuse Holders





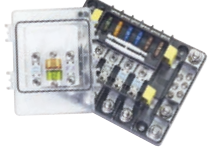
Product	Crimpable	Waterproof		Heavy Duty	Water Resistant	ATO® ATC®	Waterproof ATO® ATC®	MAXI®
								
Page Number/ PN	47 / 5060	47 / 5061	47 / 5062	47 / 5063	47 / 5021	47 / 5064	47 / 5065	48 / 5068
For use with	AGC® or MDL®	AGC® or MDL®	AGC® or MDL®	AGC® or MDL®	AGC® or MDL®	ATO® or ATC®	ATO® or ATC®	MAXI®
Wire Size	12-16 AWG	12-18 AWG	12-16 AWG	12 AWG Pigtails	-	12 AWG Pigtails	12 AWG Pigtails	#6 Red Lead Wire
Maximum Amperage	30A per circuit	30A per circuit	20A per circuit	30A per circuit	20A per circuit	30A per circuit	30A per circuit	60A per circuit
Regulatory	--	--	--	--	IP66 on front – protected against powerful water jets	--	--	--

Fuse Block Specification Table

DC Fuse Blocks

Product	MAXI®	ST-Glass	ST-Blade				
							
Page number / PN	48 / 5006	48 / 5015, 5018	49 / 5023	50 / 5035, 5037	51 / 5032	52 / 5045	52 / 5046
For use with	MAXI®	AGC® or MDL®	ATO® or ATC®	ATO® or ATC®	ATO® or ATC®	ATO® or ATC®	ATO® or ATC®
Maximum Voltage	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC	32V DC
Maximum Amperage per circuit	80A	30A	30A	30A	30A	30A	30A
Maximum Amperage per block	80A	100A	100A	40A per jumped circuit group	100A (not to exceed 80A per load group)	100A	100A
Amperage Range	30–80A	.25–30A	1–30A	1–30A	1–30A	1–30A	1–30A
Regulatory	--	--	ISO 8846, SAE J1171, IP66-protected against powerful water jets	--	--	ISO 8846, SAE J1171, IP66-protected against powerful water jets	ISO 8846, SAE J1171, IP66-protected against powerful water jets

Product	ST-Blade	Terminal (MRBF)	MEGA® or AMG®	Class T	ANL®
					
Page number / PN	53 / 5028, 5025, 5029, 5026	54 / 2151, 5191	54 / 5001	55 / 5502	55 / 5005
For use with	ATO® or ATC®	Terminal (MRBF)	MEGA® or AMG®	Class T	ANL®
Maximum Voltage	32V DC	58V DC	32V DC	160V DC	32V DC
Maximum Amperage per circuit	30A	300A	300A	400A	--
Maximum Amperage per block	100A	--	--	--	300A
Amperage Range	30–300A		100–300A	225–400A	35–300A
Regulatory	--	Meets SAE J1171 when used with Blue Sea Systems' Terminal (MRBF) Fuses Meets IP66 when used with Blue Sea Systems' Terminal (MRBF) Fuses	--	--	--

Product	ANL®	Safety AMI® or MIDI®	Safety MEGA® or AMG®	SafetyHub 100	SafetyHub 150
					
Page number / PN	55 / 5503	56 / 7720	56 / 7721	57 / 7725	57 / 7748
For use with	ANL®	AMI® or MIDI®	MEGA® or AMG®	AMI® or MIDI® and ATO® or ATC®	
Maximum Voltage	32V DC	32V DC	32V DC	12V DC	32V DC
Maximum Amperage per circuit	--	--	--	AMI® or MIDI®: 250A ATO® or ATC®: 30A	AMI® or MIDI®: 170A ATO® or ATC®: 25A
Maximum Amperage per block	750A	200A	300A	ATO® or ATC®: 50A	AMI® or MIDI®: 280A ATO® or ATC®: 50A
Maximum Total Amperage (combined)	--	--	--		280A
Amperage Range	35–750A	30–200A	100–300A	AMI® or MIDI®: 30–200A ATO® or ATC®: 1–30A	AMI® or MIDI®: 30–200A ATO® or ATC®: 1–30A
Regulatory	--	ISO 8846, SAE J1171 when cover is secure IP66-protected against powerful water jets		ISO 8846, SAE J1171 when cover is secure IP66-protected against powerful water jets	

ST CLB Circuit Breaker Blocks VIDEO ▶

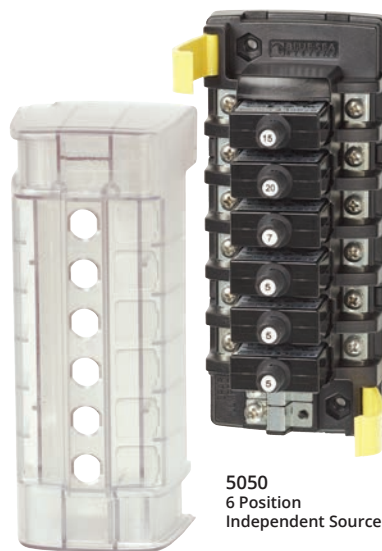
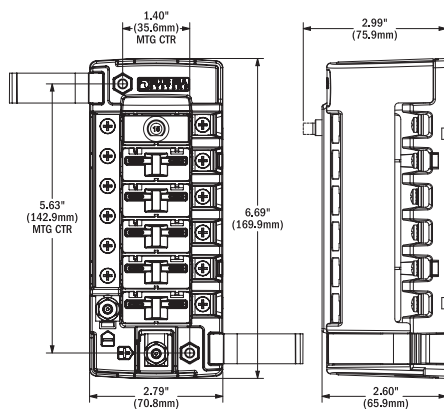
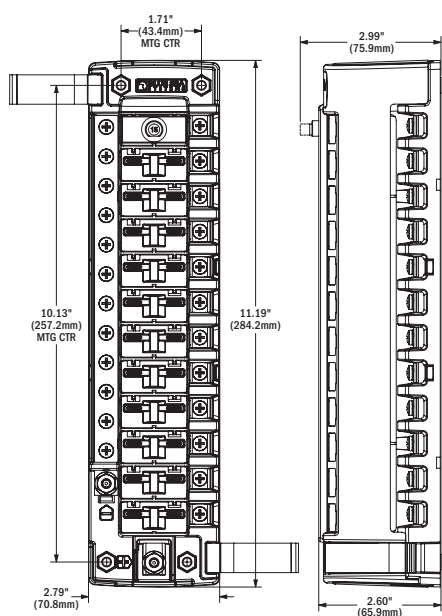
Compact surface mount solution providing secure screw termination where Push Button Reset-Only CLB Circuit Breakers are desired

- Clear insulating cover with square format label recesses, satisfies ABYC/USCG insulation requirements
- Quick connect clips allow circuit breakers to snap easily into place
- Tin-plated copper busses and screw terminals
- Breakouts allow wire access in two directions
- Accepts ring terminals
- Optional push button waterproof boots or dress nuts can be installed over cover
- Accepts square labels
- Optional jumper 5049, for use with 5050 and 5051
- Circuit breakers sold separately (p. 62)

Specifications

Voltage Max. Operating	32V DC
Amperage Max. Operating	32A (per circuit)
Amperage Max. Operating	100A (per block - common source)
Amperage Max. Operating	40A (per jumped circuit group - independent source)
Temp. Operating Range	-10°C to 60°C
Breaker Type	Push Button Reset-Only Circuit Breaker with Quick Connect Terminals
Screw Terminal	#8-32 Screws with Captive Star Lock Washer
Ring Terminals	Screw Terminals #8 (M4), Negative Bus #10 (M5)
Mounting	#8 Screw (M4) or #8 Nut

PN	Positions	Negative Bus	Source
5050	6	--	Independent Source
5051	12	--	Independent Source
5052	6	#10-32 stud	Common Source
5054	12	#10-32 stud	Common Source
5049	ST CLB Circuit Breaker Block Jumper, 5 per pack		



5050
6 Position
Independent Source

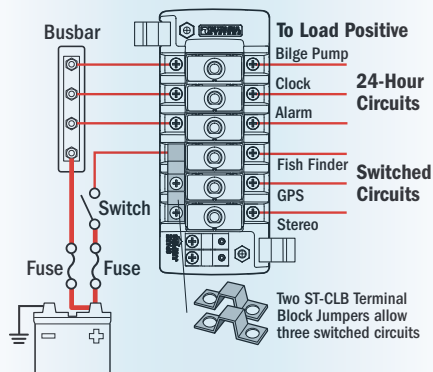


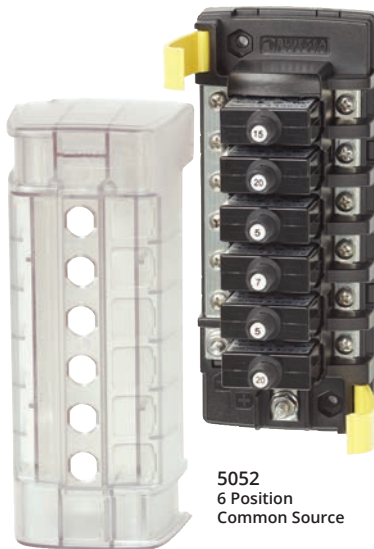
5051
12 Position
Independent Source

Related Products



Three Switched Circuits, Three 24-Hour Circuits



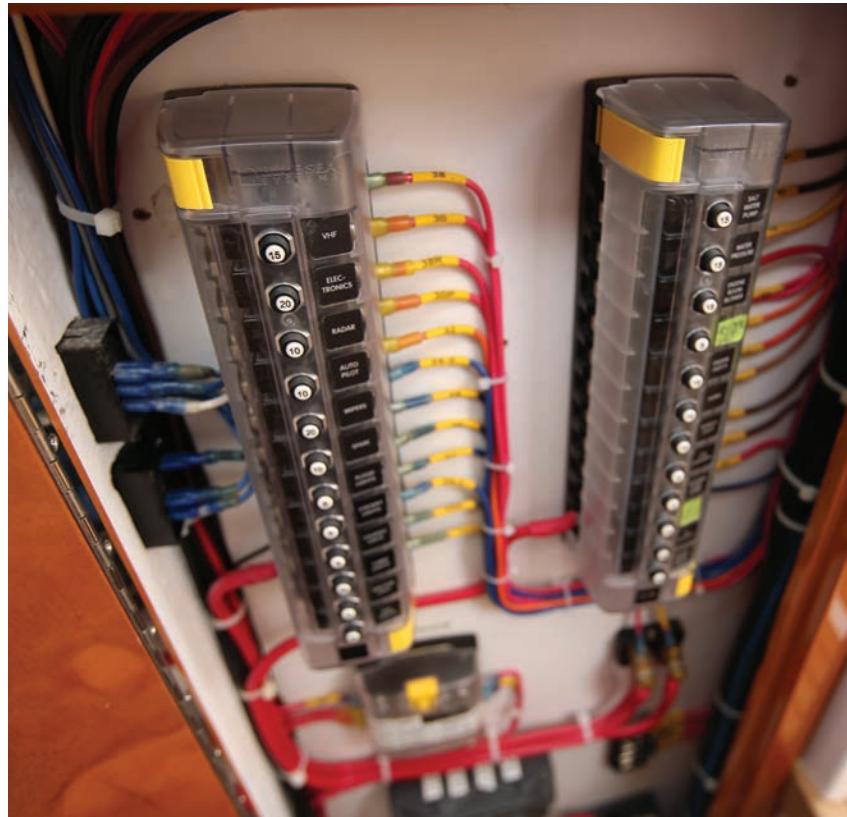
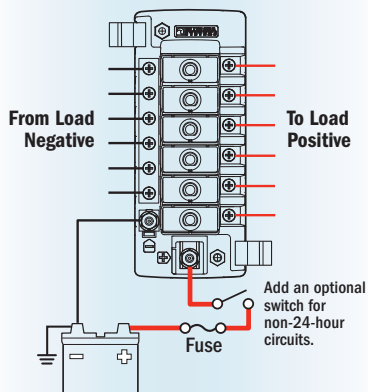


5052
6 Position
Common Source



5054
12 Position
Common Source

Six Switched or Six 24-Hour Circuits



True North Yachts installs ST-CLB blocks aboard their boats, including the True North 38.

CLB Circuit Breaker Waterproof Boots

Protects push button circuit breakers in wet environments

- Used on waterproof panels (p. 96–99)
- Protects circuit breaker in wet environments
- Replaces dress nut mounting on circuit breakers

Specifications

Thread Material Nickel-Plated Brass

Thread 3/8"-27

Regulatory

IP67 – protected against immersion up to 1 meter for 30 minutes



4135



4136

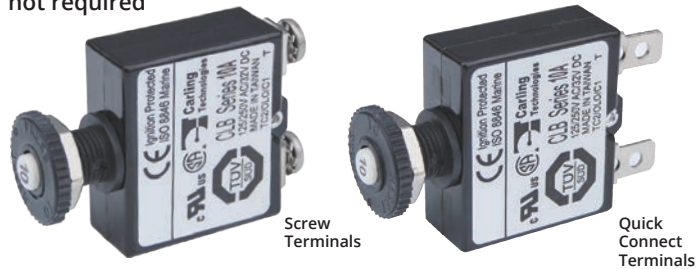


4137

PN	Description	Retail Pack
4135	Clear	2
4136	White	2
4137	Black	2

Push Button Reset-Only CLB Circuit Breakers

Provides economical circuit protection for 3 to 40 Amp loads when switching is provided elsewhere or not required



- Quick connect or screw terminal style
- Compact design enables high density circuit protection configurations
- Push-to-reset operation
- Trip Free design cannot be held ON during fault current condition
- Optional push button waterproof boot

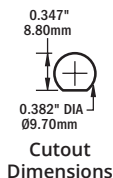
Specifications

Interrupting Capacity	3,000A @ 14.7V DC / 2,500A @ 28V DC
Voltage Max. Operating	32V DC
Temperature Min. Operating	-10°C
Temperature Max. Operating	60°C
Type	Thermal trip, manual reset
Terminals	#8 Screw Terminals or 1/4" Male Quick Connect Terminals
Screw Terminal Torque	6 in-lb max.
Trip Time Delay	See www.blueseas.com
Thread 3/8"-27 UNS	

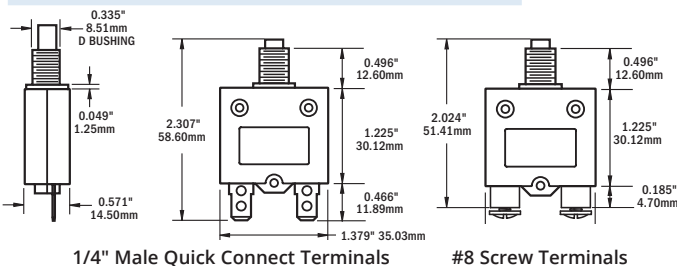
Regulatory

CE marked
UL Recognized – UL 1077 – UL/cUL (USA and Canada), TUV certified
Meets UL 1500 and ISO 8846 external ignition protection requirements
See p. 148 for ABYC Interrupting Capacity Requirements.

Screw Terminals PN	Quick Connect Terminals PN	Amps
2129	7050	3A DC
2130	7052	5A DC
2131	7053	7A DC
2132	7054	10A DC
2133	7056	15A DC
2134	7057	20A DC
2135	7058	25A DC
2136	7059	30A DC
2137	7061	40A DC



Cutout Dimensions



1/4" Male Quick Connect Terminals

#8 Screw Terminals

Medium Duty Push Button Reset-Only Circuit Breakers

Provides circuit protection for 15 to 60 Amp loads when switching is provided elsewhere or not required

- Weatherproof
- Can be used as Main or Branch
- Push-to-reset operation
- Trip Free design cannot be held ON during fault current condition
- Captive star lock washers meet requirements for anti-rotation and eliminate handling of small, easily dropped parts



2142

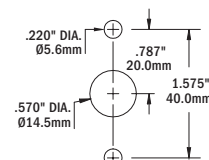
Specifications

Interrupting Capacity	5,000A @ 32V DC 3,000A @ 120V AC
Voltage Max. Operating	32V DC / 120V AC
Temperature Min. Operating	-54°C
Temperature Max. Operating	74°C
Type	Thermal trip, manual reset
Terminal Stud	#10-32 Stainless Steel
Terminal Stud Torque	30 in-lb max.
Trip Time Delay	See www.blueseas.com
Mounting Thread	#8 -32

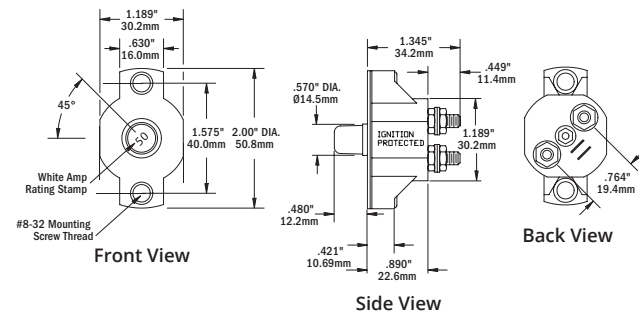
Regulatory

SAE J1428, SAE J553, UL 1077
Meets UL 1500 external ignition protection requirements
See p. 148 for ABYC Interrupting Capacity Requirements.

PN	Amps
2138	15A DC
2139	20A DC
2140	30A DC
2141	40A DC
2142	50A DC
2143	60A DC



Cutout Dimensions



Front View

Side View

Back View

Related Products



WeatherDeck® Circuit Breaker Panels
p. 96



Contura Circuit Breaker Panels
p. 98















DC Branch Circuit Breaker Panels
p. 102-105



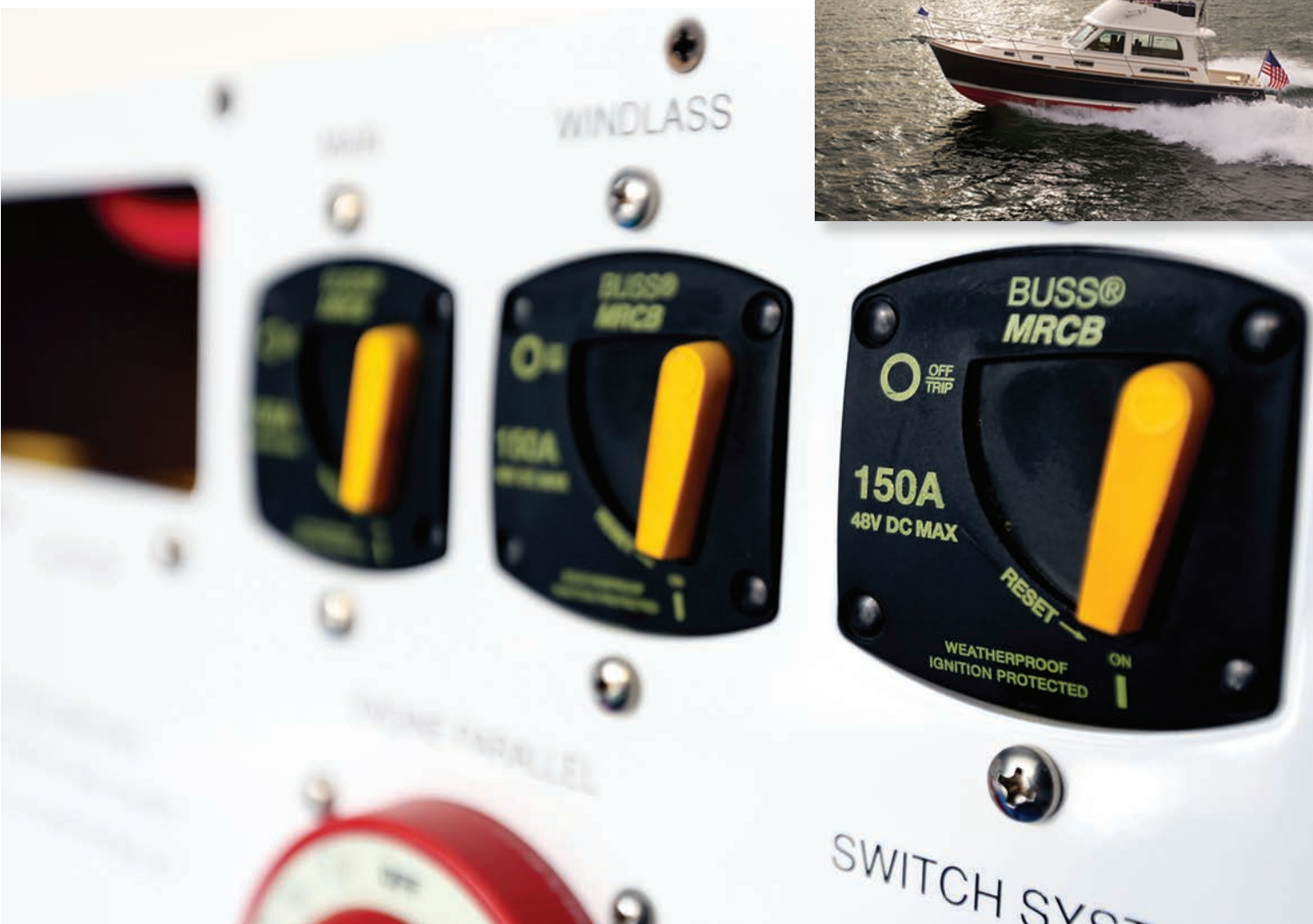
360 Panel Adapter
p. 80

Selection Chart

Choose the right Thermal Circuit Breaker for your application

	Bussmann 285 Series		Klixon		Bussmann 187 Series	
						
	Panel Mount	Surface Mount	Panel Mount	Surface Mount	Panel Mount	Surface Mount
Maximum battery size that meets ABYC AIC requirement for Main circuit protection See page 148		 OR 	 OR  			
AIC Rating	3,000A @ 48V DC		5,000A @ 12V DC			
Drop-in replacement for Bussmann 185 Series Circuit Breakers			✓		---	
Self-trimming Panel Mount case for easy installation with a hole saw	Use with 7198	---	Use with 7198	---	✓	
Large visible lever operation			---		✓	
Maximum Rating			150A		200A	
Terminals 5/16"-18			---		✓	

Sabre Yachts relies on high amperage circuit protection using 187 Series thermal circuit breakers on their yachts, including the 42 Fly Bridge Sedan.



285 Series Circuit Breakers



Provides circuit protection for 25 to 150 Amp loads when switching and circuit protection are both required

- Visible yellow reset lever shows open condition
- Trip-free design cannot be held closed after trip
- Drop in replacement for 185 Series Circuit Breakers
- 3,000A AIC for medium battery banks

Specifications

Interrupting Capacity	3,000A @ 48V DC [†]
Voltage Max. Operating	48V DC
Temperature Min. Operating	-40°C
Temperature Max. Operating	85°C
Type	Thermal
Class	Type III – Switchable/Manual Reset – Trip Free
Terminal Stud	M6 (accepts 1/4" Ring Terminal)
Terminal Stud Torque	50 in-lb (7.9 Nm)
Mounting Hole	Accepts 1/4" screw (M6)

Regulatory

CE marked

Meets SAE J1171 external ignition protection requirements,

[†]AIC ratings achieved using SAE J1625

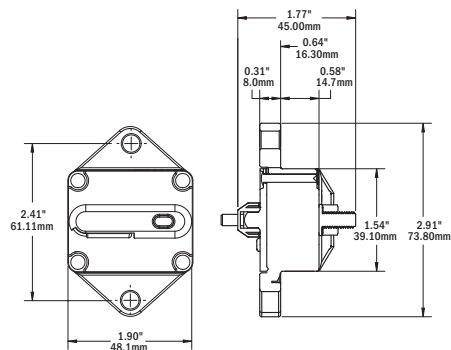
IP67 – protected against immersion up to 1 meter for 30 minutes (see inside back cover)

See p. 148 for ABYC Interrupting Capacity Requirements.

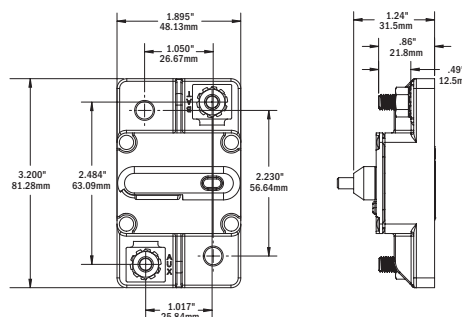
Main circuit protection for battery banks up to



7087

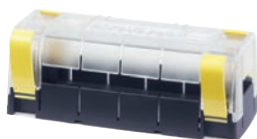


7187



Panel Mount PN	Surface Mount PN	Amps
7080	7180	25A DC
7081	7181	30A DC
7082	7182	40A DC
7083	7183	50A DC
7084	7184	60A DC
7085	7185	70A DC
7086	7186	80A DC
7087	7187	100A DC
7088	7188	120A DC
7089	7189	150A DC

Related Products



2719 Enclosure p. 86

Klixon Circuit Breakers VIDEO

Provides circuit protection for 25 to 150 Amp loads when switching and circuit protection are both required

- Visible red reset lever shows open condition
- Trip-free design cannot be held closed after trip
- Drop in replacement for 185 or 285 Series Circuit Breakers
- 5,000A AIC for large battery banks

Specifications

Interrupting Capacity	5,000A @ 12V DC
Nominal Voltage	12V DC
Voltage Max. Operating	24V DC
Temperature Min. Operating	-40°C (-40°F)
Temperature Max. Operating	82°C (185°F)
Type	Thermal
Class	Type III – Switchable/Manual Reset-Trip Free
Terminal Stud	1/4" -28
Max. Terminal Stud Torque	60 in-lb (7.9 Nm)
Mounting Hole	Accepts 1/4" screw (M6)
Max. Mounting Screw Torque	50 in-lb (5.6 Nm)

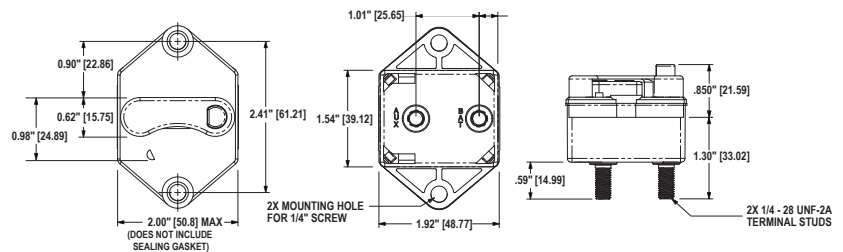
Regulatory

CE marked
Meets SAE J1171 external ignition protection requirements
IP67 – protected against immersion up to 1 meter for 30 minutes
See p. 148 for ABYC Interrupting Capacity Requirements.

Main circuit protection for battery banks up to



7078



Panel Mount PN	Surface Mount PN	Amps
7070	7170	25A DC
7071	7171	30A DC
7072	7172	40A DC
7073	7173	50A DC
7074	7174	60A DC
7075	7175	70A DC
7076	7176	80A DC
7077	7177	100A DC
7078	7178	120A DC
7079	7179	150A DC

Klixon and 285 Series Mounting Options

Provides mounting for Cooper Bussmann® Klixon, 285 Series or 185 Series
Panel Mount
Circuit Breakers



7198



7098

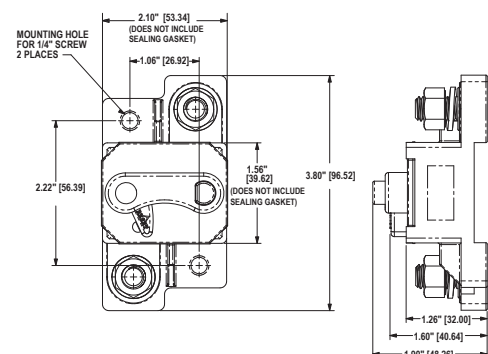


1477

PN	Description	Width in (mm)	Height in (mm)
7198	Self-trimming molded rubber bezel	2.44 (61.90)	3.31 (84.07)
7098	Circuit breaker adapter bezel allows circuit breaker mounting in a 2-1/8" round hole	2.44 (61.90)	3.31 (84.07)
1477	Provides circuit breaker mounting in the 360 Panel System	4.88 (123.83)	4.75 (120.65)



7173



187 Series Circuit Breakers

VIDEO 

Provides circuit protection for 25 to 200 Amp loads when switching and circuit protection are both required

- Self-trimming case eliminates need for mounting panels or trim bezels
- Visible yellow reset lever shows open condition
- Trip-free design cannot be held closed after trip
- Large clearance around terminal studs accepts up to 1/0 AWG lugs
- Recessed mounting holes for clean appearance
- Robust 5/16"-18 terminals provide high torque connections
- 5,000A AIC for large battery banks

Main circuit protection for battery banks up to



7044

Specifications

Interrupting Capacity	5,000A @ 12V DC 3,000A @ 24V DC 1,500A @ 42V DC
Voltage Max. Operating	48V DC
Temperature Min. Operating	-40°C
Temperature Max. Operating	85°C
Type	Thermal
Class	Type III – Switchable/Manual Reset – Trip Free
Terminal Stud	5/16"-18
Terminal Stud Torque	75 in-lb max.
Trip Time Delay	See www.blueseasea.com
Mounting Hole	Accepts #10 (M5) Screw

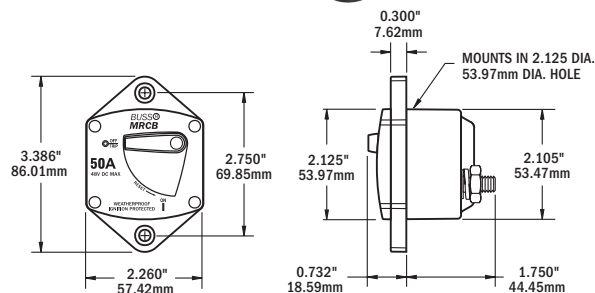
Regulatory

CE marked

Meets SAE J1171 external ignition protection requirements

IP66 – protected against powerful water jets (see inside back cover)

See p.148 for ABYC Interrupting Capacity Requirements.

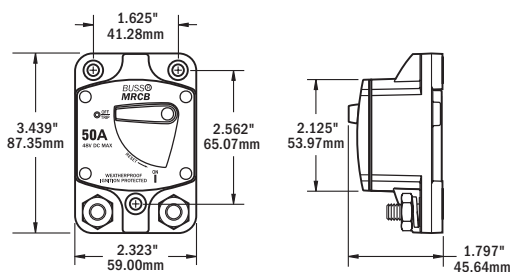


Panel Mount Dimensions

Panel Mount PN	Surface Mount PN	Amps
7035	7135	25A DC
7036	7136	30A DC
7038	7138	40A DC
7039	7139	50A DC
7040	7140	60A DC
7041	7141	70A DC
7042	7142	80A DC
7043	7143	90A DC
7044	7144	100A DC
7046	7146	120A DC
7048	7148	150A DC
7049	7149	200A DC



7140



Surface Mount Dimensions



Grady White uses Blue Sea Systems
187 Series Thermal Circuit Breakers
aboard their boats, including
the Express 306.



COTS Circuit Breakers

Military Grade Circuit Breakers

May be suitable for use when military specifications are required under CFR 46



7312

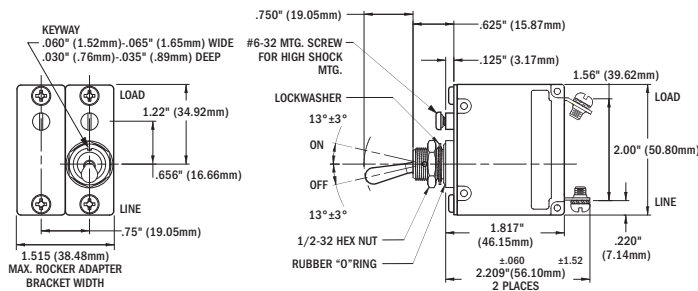
Specifications

Interrupting Capacity 7500A DC / 1,500A AC
Voltage Max. Operating 65V DC / 277V AC
Temperature Operating -40° C to 85° C
Switching Cycles 6000 Electrical, 4000 Mechanical
Type Magnetic Hydraulic – Trip free

Terminal Screw #10-32 SS
Terminal Screw Torque 14-15 in/lb
Mounting Screw #6-32 SS
Mounting Screw Torque 7-9 in/lb
Mounting Boss 1/2-32 Hex Nut SS
Mounting Nut Torque 30 in-lb max.

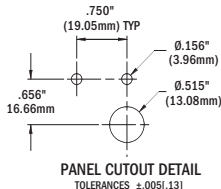
Regulatory

UL 1077, CSA



Double Pole Circuit Breakers

PN	Amps	Actuator Style
7310	5A DC	Toggle
7311	10A DC	Toggle
7312	15A DC	Toggle
7313	20A DC	Toggle
7314	25A DC	Toggle
7315	30A DC	Toggle
7316	40A DC	Toggle
7317	50A DC	Toggle



Metal Shark boats builds custom aluminum boats for government agencies. The Custom 360 Panel with Mil-Spec Toggle Circuit Breakers is housed inside the center console and distributes power to critical loads aboard the Defiant 29.



UL-489 Circuit Breakers

Military Grade Circuit Breakers

May be suitable for use when UL-489 specifications are required under CFR 46



7464



7466

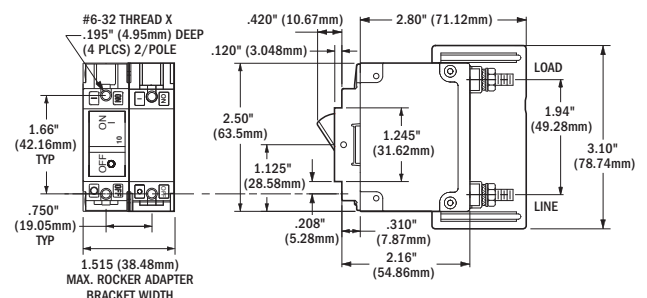
Specifications

Interrupting Capacity 5000A
Voltage Max. Operating 250V AC
Temperature Min. Operating -40° C
Temperature Max. Operating 85° C
Type C-Series, Magnetic Hydraulic – Trip free

Terminal Stud 1/4"-20 Tin-Plated Brass
Terminal Stud Torque 35 in/lb
Mounting Screw #6-32 SS
Mounting Screw Torque 7-9 in/lb

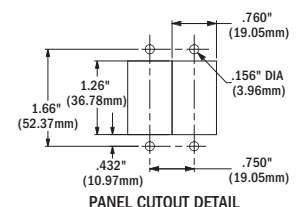
Regulatory

UL 489, CSA



Double Pole Circuit Breakers

PN	Amps	Actuator Style
7461	10A DC	Flat Rocker
7462	15A DC	Flat Rocker
7463	20A DC	Flat Rocker
7464	25A DC	Flat Rocker
7465	30A DC	Flat Rocker
7466	30A DC	Raised Rocker
7467	50A DC	Raised Rocker



A-Series Toggle Circuit Breakers

Combines switching and circuit protection into a single device



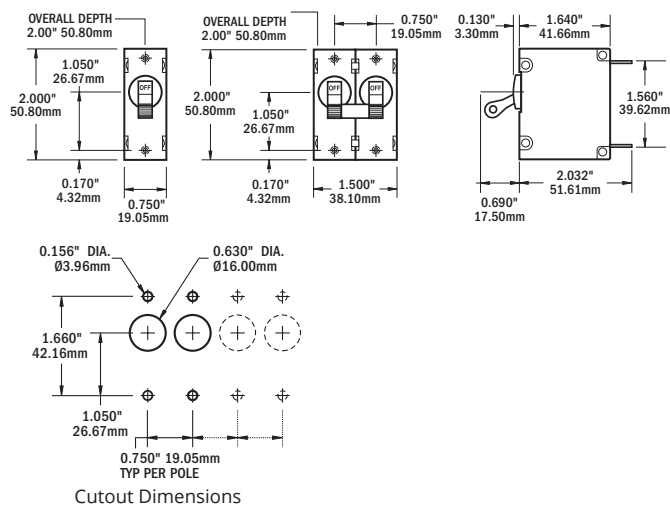
- The standard circuit breaker for Blue Sea Systems Traditional Metal Power Distribution Panels
- Single pole is frequently used for AC or DC Branch circuit protection
- Double pole is typically used for AC Main circuit protection
- Trip Free – cannot be held closed after trip

Specifications

Voltage Max. Operating	65V DC / 250V AC
Temperature Min. Operating	-40°C
Temperature Max. Operating	85°C
Switching Cycles	10,000 @ rated amps and volts
Type	Magnetic Hydraulic – Trip free
Terminal Screw	#10-32 Stainless Steel
Terminal Screw Torque	14-15 in-lb Recommended
Trip Time Delay	See www.blueseas.com
Mounting Screw	#6-32 Stainless Steel (included)
Mounting Screw Torque	6-8 in-lb Recommended

Regulatory

CE marked, TUV certified, CSA certified, UL 1077 recognized



Related Products



360 Panel System
p. 100



Traditional Metal Panel
p. 101

Single Pole Circuit Breakers

PN	Color	DC Amps	AC Amps
7200	Black	5A DC	5A AC
7201	Red	5A DC	5A AC
7202	White	5A DC	5A AC
7347	Black	8A DC	8A AC
7299	White	8A DC	8A AC
7204	Black	10A DC	10A AC
7205	Red	10A DC	10A AC
7206	White	10A DC	10A AC
7208	Black	15A DC	15A AC
7209	Red	15A DC	15A AC
7210	White	15A DC	15A AC
7212	Black	20A DC	20A AC
7213	Red	20A DC	20A AC
7214	White	20A DC	20A AC
7216	Black	25A DC	25A AC
7217	Red	25A DC	25A AC
7218	White	25A DC	25A AC
7220	Black	30A DC	30A AC
7221	Red	30A DC	30A AC
7222	White	30A DC	30A AC
7224	Black	40A DC	40A AC
7225	Red	40A DC	40A AC
7226	White	40A DC	40A AC
7228	Black	50A DC	50A AC
7229	Red	50A DC	50A AC
7230	White	50A DC	50A AC

Double Pole Circuit Breakers

PN	Color	DC Amps	AC Amps
7232	Black	10A DC	10A AC
7233	White	10A DC	10A AC
7234	Black	15A DC	15A AC
7235	White	15A DC	15A AC
7348	Black	16A DC	16A AC
7294	White	16A DC	16A AC
7236	Black	20A DC	20A AC
7260	White	20A DC	20A AC
7237	Black	30A DC	30A AC
7238	White	30A DC	30A AC
7349	Black	32A DC	32A AC
7295	White	32A DC	32A AC
7239	Black	40A DC	40A AC
7240	White	40A DC	40A AC
7241	Black	50A DC	50A AC
7242	White	50A DC	50A AC

Interrupting Capacity Table (see ABYC Requirements p. 148)

			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles	Volts	Amps	Interrupt	Interrupt
1 Pole	65V DC	5-50A	7,500A	---
	120V AC	5-50A	3,000A	---
	250V AC	5-50A	3,000A	1,500A
2 Pole	65V DC	10-50A	7,500A	---
	120V AC	10-50A	3,000A	---
	120/240V AC	10-50A	3,000A	---
	250V AC	10-50A	3,000A	1,500A

Circuit Breaker Mounting Options

- 3131 enclosure, strain reliefs included for secure installation of circuit breakers
- 3131 enclosure, accepts A-Series Toggle and A and C-Series Flat Rocker Circuit Breakers, LEDs (p. 137), and Square Format Labels (p. 138) for custom configurations
- 8072 and 8173 panels, accept A-Series Toggle Circuit Breakers, Large Format Labels (p. 138) and LEDs (p. 137)



3131



8072



8173

PN	Description	Width in (mm)	Height in (mm)	Depth in (mm)
3131	Circuit Breaker Enclosure	3.95 (100.36)	4.92 (124.91)	4.07 (103.40)
8072	Single pole mounting panel	2.63 (66.80)	3.75 (92.25)	0.125 (3.175)
8173	Double pole mounting panel	2.63 (66.80)	3.75 (92.25)	0.125 (3.175)

A-Series Rocker Circuit Breakers

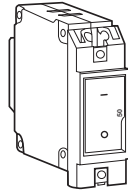
Combines switching and circuit protection into a single device



7403

Flat Rocker

- Standard circuit breaker used on the 360 Panel System (1200 Series)
- Flat actuator resists accidental switching by being flush in the ON position



7425

Restricted-OFF Rocker

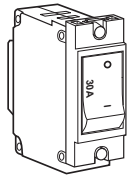
- Actuator shows white in the OFF position
- Restricted OFF actuator can only be switched to OFF by insertion of small screwdriver into slot



7574

Raised Rocker

- Standard circuit breaker for AC Source Select panels in the 360 Panel System



- White actuator indicates OFF position
- Single pole is available in Flat Rocker and Restricted Off styles
- Single pole is frequently used for AC or DC Branch circuit protection
- Double pole is available in Flat Rocker and Raised Rocker styles
- Double pole is typically used for AC Main circuit protection
- Raised Rocker actuator style is used for AC source selection on the 360 Panel System
- International ON and OFF symbols support vertical or horizontal mounting

Specifications

Voltage Max. Operating	32V DC / 250V AC
Temperature Min. Operating	-40°C
Temperature Max. Operating	85°C
Switching Cycles	10,000 @ rated amps and volts
Type	Magnetic Hydraulic - Trip free
Terminal Screw	#10-32 Stainless Steel
Terminal Screw Torque	14-15 in-lb Recommended (load terminal is 30° angled)
Trip Time Delay	See www.blueseas.com
Mounting Screw	#6-32 Stainless Steel (included)
Mounting Screw Torque	6-8 in-lb Recommended

Regulatory

CE marked, TUV certified, CSA certified, UL 1077 recognized

Interrupting Capacity Table (see ABYC Requirements p. 148)

			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles	Volts	Amps	Interrupt	Interrupt
1 Pole	32V DC	5-50A	5,000A	--
	125V AC	5-50A	3,000A	--
	250V AC	5-50A	1,500A	1,500A
2 Pole	32V DC	10-50A	5,000A	--
	240V AC	10-50A	3,000A	--
	240V AC	10-50A	3,000A	1,500A

Single Pole Circuit Breakers

PN	DC Amps	AC Amps	Rocker Actuator
7400	5A DC	5A AC	Flat
7425	5A DC	5A AC	Restricted-OFF
7401	8A DC	8A AC	Flat
7402	10A DC	10A AC	Flat
7427	10A DC	10A AC	Restricted-OFF
7403	15A DC	15A AC	Flat
7428	15A DC	15A AC	Restricted-OFF
7404	20A DC	20A AC	Flat
7429	20A DC	20A AC	Restricted-OFF
7405	25A DC	25A AC	Flat
7430	25A DC	25A AC	Restricted-OFF
7406	30A DC	30A AC	Flat
7407	40A DC	40A AC	Flat
7408	50A DC	50A AC	Flat
7433	50A DC	50A AC	Restricted-OFF

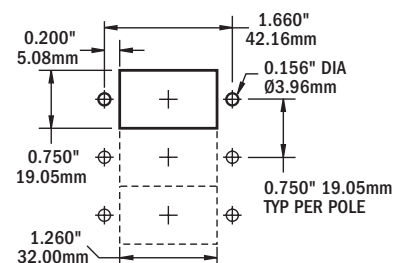
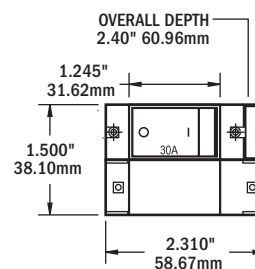
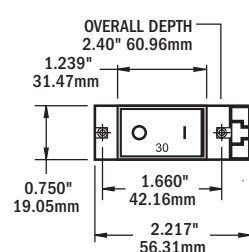
Double Pole Circuit Breakers

PN	DC Amps	AC Amps	Rocker Actuator
7410	10A DC	10A AC	Flat
7411	15A DC	15A AC	Flat
7412	16A DC	16A AC	Flat
7413	20A DC	20A AC	Flat
7574	30A DC	30A AC	Raised
7414	30A DC	30A AC	Flat
7575	32A DC	32A AC	Raised
7415	32A DC	32A AC	Flat
7416	40A DC	40A AC	Flat
7577	50A DC	50A AC	Raised
7417	50A DC	50A AC	Flat

Related Products



360 Panel System
p. 100



Cutout Dimensions

C-Series Toggle Circuit Breakers

Combines switching and circuit protection into a single device



7250*



7267



7270



7251



7287

DC Features

- Large frame provides stud termination for 5–300 Amp loads
- Provides overcurrent protection for inverters, bow thrusters, and windlasses
- Offers high interrupt capacity – suitable for Main circuit protection
- Trip Free – cannot be held closed after trip

AC Features

- Frequently used for 120/240 Volt AC circuit protection
- Double pole can be used as AC Main circuit breaker to switch hot and neutral or two hots in 120/240 Volt AC Branch applications
- Triple pole can be used as 120/240 Volt AC Main circuit breaker to switch both lines (hots) and neutral
- Double and triple pole circuit breakers will trip all poles if any one pole trips

Specifications

Temperature Min. Operating	-40°C
Temperature Max. Operating	85°C
Switching Cycles	10,000 @ rated amps and volts
Type	Magnetic Hydraulic – Trip free
Terminal Stud	1/4"-20 Tin-Plated Brass
Terminal Stud Torque	35 in-lb max.
Trip Time Delay	See www.blueseas.com
Mounting Screw	#6-32 Stainless Steel (included)
Mounting Screw Torque	6–8 in-lb Recommended

Regulatory

7250I Only – meets SAE J1171, UL 1500, and ISO 8846 external ignition protection requirements

Interrupting Capacity Table (see ABYC Requirements p. 148)

			UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
Poles	Volts	Amps	Interrupt	Interrupt
1 Pole	80V DC	5–100A	10,000A	--
	125V AC	5–100A	5,000A	--
	250V AC	5–100A	5,000A	5,000A
1 Pole PN 7250I	48V DC	100A	5,000A	--
	125V AC	100A	1,500A	--
2 and 3 Pole	65V DC	150–300A	5,000A [‡]	--
	125/250V AC	30–100A	5,000A	5,000A
	250V AC	30–100A	5,000A	5,000A

[‡] No agency approvals

Related Product



Traditional Metal Panel 7372
p. 110

Single Pole Circuit Breakers

PN	Color	DC Amps	AC Amps
7350	White	5A DC	5A AC
7351	White	10A DC	10A AC
7352	White	15A DC	15A AC
7353	White	20A DC	20A AC
7354	White	25A DC	25A AC
7355	White	30A DC	30A AC
7244	White	50A DC	50A AC
7246	White	60A DC	60A AC
7248	White	80A DC	80A AC
7250	White	100A DC	100A AC
7250I	Red	100A DC	100A AC

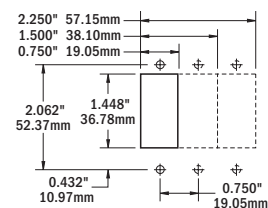
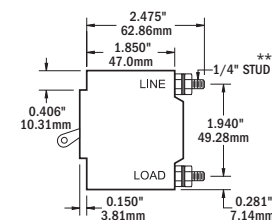
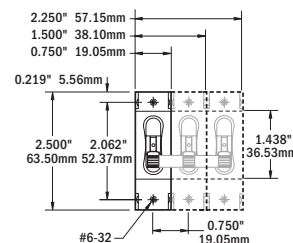
Double Pole Circuit Breakers

PN	Color	DC Amps	AC Amps
7365	White	--	30A AC
7251	White	--	50A AC
7254	White	--	60A AC
7256	White	--	80A AC
7258	White	--	100A AC
7267*	White	150A DC	--
7268*	White	175A DC	--
7269*	White	200A DC	--

Triple Pole Circuit Breakers

PN	Color	DC Amps	AC Amps
7287	White	--	50A AC
7288	White	--	60A AC
7289	White	--	80A AC
7290	White	--	100A AC
7270*	White	250A DC	--
7271*	White	300A DC	--

* Paralleled poles have 5/16" stud on bus



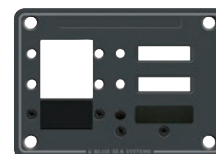
Cutout Dimensions

C-Series Toggle Circuit Breaker Mounting Panels

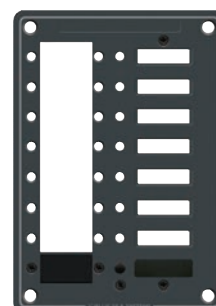
Simplifies mounting C-Series Toggle Circuit Breakers

- Accepts Blue Sea Systems Large Format Labels and ON indicating LEDs
- Panel plugs can be inserted to fill blank positions
- Panel Plug Kit 8089 included – circuit breaker mounting screws, panel plug, LED plug and blank label

PN	Description	Width in (mm)	Depth in (mm)
8088	3 position	5.25 (133.35)	3.75 (95.25)
8087	8 position	5.25 (133.35)	7.50 (190.50)
8089	Panel Plug Kit	--	--



8088



8087

C-Series Rocker Circuit Breakers

Combines switching and circuit protection into a single device



DC Features

- White actuator indicates OFF position
- Large frame provides stud termination for 5–300 Amp loads
- Flat rocker actuator is flush in the ON position, reducing the risk of accidental switching
- Provides overcurrent protection for inverters, bow thrusters, and windlasses
- Trip Free – cannot be held closed after trip

Specifications

Temperature Min. Operating	-40°C
Temperature Max. Operating	85°C
Switching Cycles	10,000 @ rated amperage and voltage
Type	Magnetic Hydraulic – Trip free
Terminal Stud	1/4"-20 Tin-Plated Brass
Terminal Stud Torque	35 in-lb max.
Trip Time Delay	See www.blueseasea.com
Mounting Screw	#6-32 Stainless Steel (included)
Mounting Screw Torque	6–8 in-lb Recommended

Regulatory

Single-pole circuit breakers only – CE marked, meet SAE J1171, UL 1500 and ISO 8846 external ignition protection requirements, CSA certified, and UL 1077 recognized

AC Circuit breakers only – TUV certified, CSA certified, and UL 1077 recognized

AC and AC/DC Circuit breakers only – CE marked

Interrupting Capacity Table (see ABYC Requirements p. 148)

Poles	Volts	Amps	UL 1077 - UL/CSA (US/Canada)	EN60934 - TUV (Europe)
1 Pole	32V DC	5–100A	5,000A	--
	120V AC	5–100A	3,000A	--
	240V AC	5–50A	3,500A	--
2 and 3 Pole	48V DC	150–300A	5,000A	--
	48V DC	150–200A	--	5,000A
	120/240V AC	30–100A	5,000A	--
	240V AC	30–100A	--	5,000A

AC Features

- Used for 120/240 Volt AC circuit protection
- Double pole can be used as AC Main circuit breaker to switch hot and neutral or two hots in 120/240 Volt AC Branch applications
- Triple pole can be used as 120/240 Volt AC Main circuit breaker to switch both lines (hots) and neutral
- Double and triple pole circuit breakers will trip all poles if any one pole trips

Single Pole Circuit Breakers

PN	DC Amps	AC Amps	Rocker Actuator
7540	5A DC	5A AC	Flat
7541	10A DC	10A AC	Flat
7542	15A DC	15A AC	Flat
7543	20A DC	20A AC	Flat
7545	30A DC	30A AC	Flat
7546	50A DC	50A AC	Flat
7547	60A DC	60A AC	Flat
7548	80A DC	80A AC	Flat
7549	100A DC	100A AC	Flat

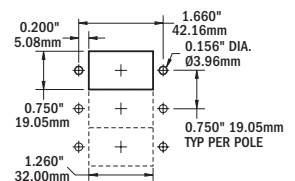
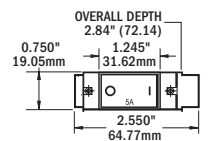
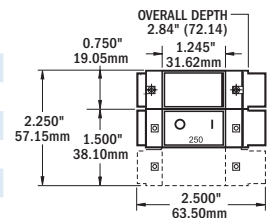
Double Pole Circuit Breakers

PN	DC Amps	AC Amps	Rocker Actuator
7560	--	30A AC	Flat
7580	--	30A AC	Raised
7561	--	50A AC	Flat
7581	--	50A AC	Raised
7563	--	80A AC	Flat
7583	--	80A AC	Raised
7564	--	100A AC	Flat
7584	--	100A AC	Raised
7475*	150A DC	--	Flat
7476*	200A DC	--	Flat

Triple Pole Circuit Breakers

PN	DC Amps	AC Amps	Rocker Actuator
7565	--	50A AC	Flat
7585	--	50A AC	Raised
7568	--	100A AC	Flat
7588	--	100A AC	Raised
7477*	250A DC	--	Flat
7554*	300A DC	--	Flat

* Paralleled poles have 5/16" stud on bus



Cutout Dimensions

Related Product



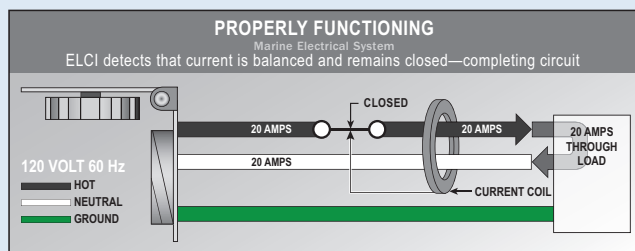
360 Panel System 1168
p.110

TECH tip™

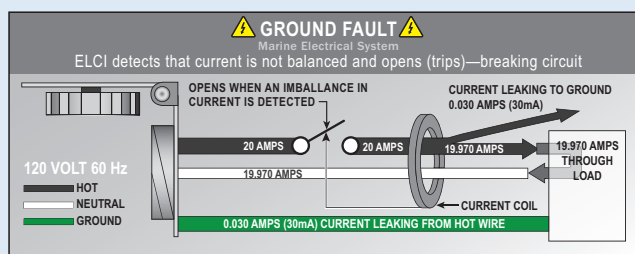
AC Ground Faults ELCI, the Boater and ABYC Explained

Understanding Equipment Leakage Circuit Interrupters (ELCIs) and Ground Fault Circuit Interrupters (GFCIs) to make your boat safer. There are two potential failures in a boat's electrical system that can put people on or around the boat at risk of lethal electric shock.

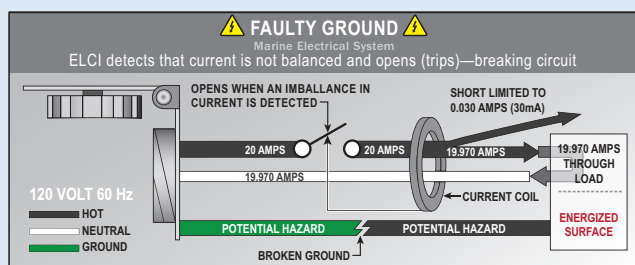
In a properly functioning marine electrical system, the same amount of AC current flows in the hot and neutral wires.



However, if electricity "leaks" from this intended path in these two wires to ground, this condition is called a ground fault. An example of this is an insulation failure in the wiring of an appliance.



In addition, a faulty ground can occur when the grounding path is broken through a loose connection or broken wire. For instance, a shore power cord ground wire may fail due to constant motion and stress.



Faulty grounds can be undetectable; a simple continuity test will not necessarily reveal a problem. When these two conditions occur at the same time, the results may be tragic.

The combination of a ground fault and a faulty ground can result in metal parts on the boat and under water becoming energized. If an electric drill with faulty internal wiring or a worn cord falls into the bilge, the water in the bilge will become energized, putting the worker and those nearby at risk.

In addition to the hazard to people on the vessel, there is a larger danger to swimmers near the boat. While people on board are likely to receive a shock from touching energized metal parts, nearby swimmers could receive a paralyzing dose of electricity and drown due to involuntary loss of muscle control.

A Coast Guard sponsored study showed numerous instances of electrical leakage causing drowning or potential drowning even though the shock did not directly cause electrocution.

Given the seriousness of the problem, ABYC requirements now include specific measures for avoiding this danger:

ABYC E-11.13.3.5 states:

If installed in a head, galley, machinery space, or on a weather deck, the receptacle shall be protected by a Type A (nominal 5 milliamperes) Ground Fault Circuit Interrupter (GFCI).

ABYC E-11.11.1 states:

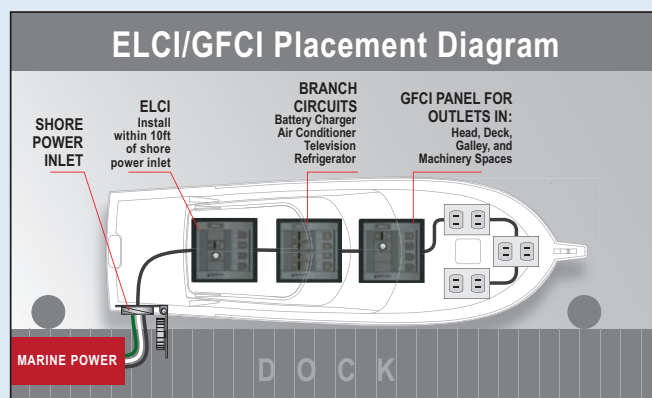
An Equipment Leakage Circuit Interrupter (ELCI) shall be installed with or in addition to the main shore power disconnect circuit breaker(s) or at the additional overcurrent protection as required by E-11.10.2.8.3 whichever is closer to the shore power connection.

ELCIs, and the more familiar GFCIs (Ground Fault Circuit Interrupter), are part of a larger family of devices that measure current flow in the hot and neutral wires and immediately switch the electricity off if an imbalance of current flow is detected. ELCIs and GFCIs that are also RCBOs (Residual Current Circuit Breaker) provide overcurrent tripping protection characteristic of a normal circuit breaker.

GFCIs are used as branch circuit ground fault protection at the 5mA threshold in potentially wet environments. GFCIs protect against flaws in devices plugged into them, but offer no protection from the danger of a failing hard-wired appliance, such as a water heater or cook top.

In contrast, an ELCI provides additional whole-boat protection.

Installed as required within 10' of the shore power inlet, an ELCI provides 30mA ground fault protection for the entire AC shore power system beyond the ELCI. ABYC regulations still require the use of GFCIs in environments described above.



Although ABYC regulations apply only to new boat construction, ELCIs can mitigate dangers and liabilities that exist for any boat owner with a shore power connection. Retrofitting an ELCI to an existing AC system can be a worthwhile safeguard against risk. Since an ELCI/RCBO can serve as the main shore power circuit breaker, it can replace a standard circuit breaker in this application. Alternatively, an ELCI/RCBO can be added between the shore power inlet and the existing main shore power circuit breaker. Safety ground system failures on boats are safety and liability disasters waiting to happen. ELCI protection on each shore power line, combined with protection afforded by GFCIs, will reduce risk to those on the boat, the dock, and in the water surrounding the boat.

*The ABYC has an exemption to this rule if an isolation transformer is used. See E-11 for specific information regarding the exemption.

Residual Current Circuit Breakers

GFCI Branch and ELCI Main

Residual Current Devices (RCDs) respond to leakage of electrical current outside of the intended circuit path.

When the RCD function is combined with a circuit breaker for over current protection, the device is often referred to as an RCBO. In the USA, a device that trips on leakages of nominally 5mA and meets certain standards is called a Ground Fault Circuit Interrupter (GFCI). A device meeting the same standards but with a trip level of 30mA is called an Equipment Leakage Circuit Interrupter (ELCI). The devices below provide GFCI Branch or ELCI Main functions and circuit protection in panel mounted breakers.

- Trips on short circuit, overload, or leakage to ground
- For installation in a power distribution panel
- GFCI Branch – Provides overcurrent and leakage protection per ABYC E-11 for head, galley, machinery and weather deck receptacles
- ELCI Main – Provides overcurrent and leakage protection per ABYC E-11 for whole boat shore power protection

Specifications

Interrupting Capacity	5,000A
Temperature Min. Operating	-35°C
Temperature Max. Operating	66°C
Switching Cycles	10,000 @ rated amperage and voltage
Type	Magnetic Hydraulic – Trip free
Mounting Screw	#6-32 Stainless Steel
Mounting Screw Torque	6-8 in-lb Recommended

Regulatory

3100 – UL 1077, UL 943 Class A

3103, 3104, 3102100, 3106100, 3091, 3092, 3093 – UL 1077, UL 943 Class A, UL 1500

AC and AC/DC Circuit Breakers Only – CE marked

PN	Description	Frame Series	Nominal Voltage	Actuator	Ignition Protected	Poles	AC Main Amps	AC Branch Amps	Leakage Trip Amps
3100	GFCI Branch	A-Series	120V AC per pole	Flat Rocker	—	1	—	15A	5mA
3102100	ELCI Main	A-Series	120V AC per pole	Flat Rocker	Yes	2	30A	—	30mA
3103	ELCI Main	C-Series	120V AC per pole	Flat Rocker	Yes	2	50A	—	30mA
3104	ELCI Main	C-Series	120/240V AC per pole	Flat Rocker	Yes	3	50A	—	30mA
3106100	ELCI Main	A-Series	120V AC per pole	White Toggle	Yes	2	30A	—	30mA
3091	ELCI Main	C-Series	230V AC per pole*	Flat Rocker	Yes	2	16A	—	30mA
3092	ELCI Main	C-Series	230V AC per pole*	Flat Rocker	Yes	2	32A	—	30mA
3093	ELCI Main	C-Series	240V AC per pole†	Flat Rocker	Yes	2	50A	—	30mA

* 230V AC, Typical of Europe

† 240V AC, For isolation transformer applications



3100



3102100



3103, 3091, 3092, 3093



3104



3106100

Related Products



SMS Surface Mount System
p. 74



Residual Current Circuit Breaker
GFCI Branch and ELCI Main Panels
p. 110

SMS Surface Mount System Panel Enclosure

Panel enclosure for ELCI Main circuit breakers and other large frame devices. Meets ABYC E-11 when used with an ELCI Main circuit breaker and mounted within 10 feet of the shore power inlet

- Blank apertures for custom breaker loading
- Clear cover allows easy view of circuit breaker status
- Blank circuit positions accommodate Carling Technologies™ A and C Series Flat Rocker and ELCI Main circuit breakers
- Stainless steel mounting hardware included

Specifications

Enclosure Size	6.0" x 6.0" x 4.0"
	152 mm x 152 mm x 102 mm
Exterior Overall Dimensions	7.6" x 7.4" x 4.7"
	192 mm x 188 mm x 120 mm
Temperature Range	-40°C to 85°C
Cover Screws and Hardware	10-32 stainless steel
Mounting Hardware	Ø 1/4", #12, (6 mm)

Regulatory

IP66 – Protected against powerful water jets when cover is latched

Flammability rating – Per UL 508,

Toxicity – Non-toxic, halogen free, RoHS compliant

UL Listed and NEMA 4X rated, NEMA Type 4, 4X, 6, 6P, 12, and 13

See p.148 for ABYC Interrupting Capacity Requirements.



3120 NOTE: SMS panel enclosures are pre-assembled and ready for wire connections. Customers must select wire and entry or exit locations, drill holes, and install the appropriate glands.



PN	3113	3116	3117
Description	6 blank circuit positions	ELCI Main + 3 blank circuit positions	120V AC ELCI 30A Dual
Circuit Breakers Installed	--	1 × ELCI Main 120V, 30A, 30mA (3102)	2 × ELCI Main 120V 30A, 30mA (3102)
Glands Included	--	2 × (3124) 3 × (3125)	2 × (3124) 4 × (3125)
LEDs Installed	--	4 × green ON indicating 120V AC (8034) 1 × red Reverse Polarity 120V AC (8066)	2 × green ON indicating 120V AC (8034) 2 × red Reverse Polarity 120V AC (8066)
Labels Included	30 Basic DC (4205) 30 Basic AC (4206) Panel Voltage ID Labels	1 × AC Main, 1 Reverse Polarity 1 × ELCI, 30 Basic AC (4206) Panel Voltage ID - 120V AC	Source Selection label Set - 10 labels 2 × Reverse Polarity, 2 ELCI Panel Voltage ID - 120V AC



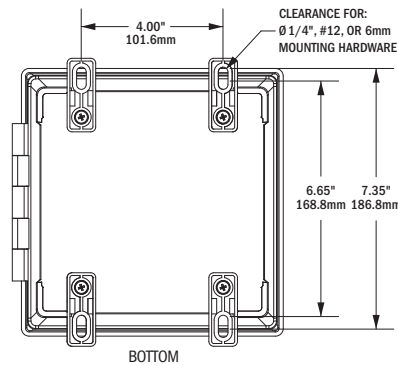
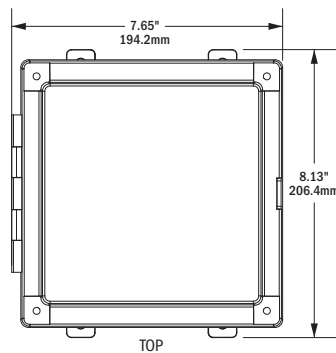
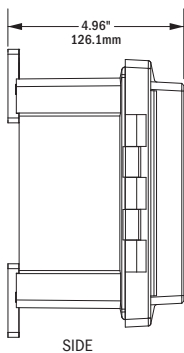
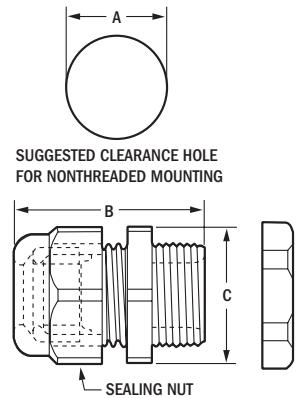
PN	3118	3119	3120
Total Positions	ELCI Main + 2 blank circuit positions	ELCI Main + 1 blank circuit positions	ELCI Main + 2 blank circuit positions
Circuit Breakers Installed	1 × ELCI Main 120V 50A, 30mA (3103)	1 × ELCI Main 120/240V, 50A, 30mA (3104)	1 × ELCI Main 240V, 50A, 30mA (3093)
Glands Included	2 × (3124) 1 × (3125) 2 × (3126)	2 × (3124) 1 × (3125) 2 × (3126)	2 × (3124) 1 × (3125) 2 × (3126)
LEDs Installed	3 × green ON indicating 120V AC (8034) 1 × red "Reverse Polarity" 120V AC (8066)	3 × green ON indicating 120V AC (8034) 1 × red Reverse Polarity 120V AC (8066)	2 × green ON indicating 240V AC (6806)
Labels Included	1 × AC Main, 1 Reverse Polarity 1 × ELCI, 30 Basic AC (4206) Panel Voltage ID - 120V AC	1 × AC Main, 1 Reverse Polarity 1 × ELCI, 30 Basic AC (4206) Panel Voltage ID - 120V/240V AC	1 × AC Main, 1 ELCI Panel Voltage ID - 240V AC

SMS Surface Mount System Panel Enclosure Glands

Used on the SMS Surface Mount System Panel Enclosures



PN	3124	3125	3126
Description	Small Gland PG7	Medium Gland PG16	Large Gland PG29
Wire Size	#14 to #10 Single Wire	#14 to #10 Cable, 3 Conductor	#6 Cable, 4 Conductor
Cable Dia. Minimum	.114 in (2.9 mm)	.230 in (2.9 mm)	.590 in (15.0 mm)
Cable Dia. Maximum	.250 in (6.4 mm)	.530 in (2.9 mm)	.990 in (25.4 mm)
Dimensions in (mm)	A. Clearance Hole .492 (12.5) B. Max. O. A. Length 1.17 (29.7) C. Wrenching Flats .59 (15.0)	A. Clearance Hole .886 (22.5) B. Max. O. A. Length 1.66 (42.2) C. Wrenching Flats 1.05 in (26.7)	A. Clearance Hole 1.47 (37.3) B. Max. O. A. Length 2.23 (56.6) C. Wrenching Flats 1.66 (42.2)



Related Products



A-Series Toggle and Rocker Circuit Breakers
p. 68-69



C-Series Rocker Circuit Breakers
p. 71



ELCI Circuit Breakers
p. 73











Circuit Breaker Enclosure
p. 68



Metal Shark boats builds custom aluminum boats for government agencies and relies on the Blue Sea Systems Surface Mount System (SMS) box with ELCI aboard the Relentless 28.

Circuit Breaker Specification Table







DC Thermal Circuit Breakers

Product	Push Button Reset-Only	Medium Duty Push Button Reset-Only*	285 Series Panel Mount	285 Series Surface Mount	Klixon Panel Mount	Klixon Surface Mount	187 Series Panel Mount	187 Series Surface Mount
								
Page number	62	62	63-64	63-64	63, 65	63, 65	63, 66	63, 66
Interrupting Capacity	3,000A @ 14.7V DC 2,500A @ 28V DC	5,000A @ 32V DC 3,000A @ 120V AC*	3,000A @ 48V DC†	3,000A @ 48V DC†	5,000A @ 12V DC	5,000A @ 12V DC	5,000A @ 12V DC 3,000A @ 24V DC 1,500A @ 42V DC	5,000A @ 12V DC 3,000A @ 24V DC 1,500A @ 42V DC
Max. Voltage	32V DC	32V DC / 120V AC*	48V DC	48V DC	24V DC	24V DC	48V DC	
Amperages	3-40A	15-60A	25-150A	25-150A	25-150A	25-150A	25-200A	25-200A
Regulatory	CE marked, UL 1077, TUV certified, UL 1500, ISO 8846	SAE J1428, SAE J553, UL 1077, UL 1500	CE marked, SAE J1171, IP67	CE marked, SAE J1171, IP67	CE marked, SAE J1171, IP67	CE marked, SAE J1171, IP67	CE marked, SAE J1171, IP66	CE marked, SAE J1171, IP66

* Medium Duty Push Button Reset-Only Circuit Breakers are AC/DC rated

† AIC ratings achieved using SAE J1625


AC/DC A-Series Circuit Breakers

Product	A-Series Toggle	A-Series Flat Rocker	A-Series Restricted Off Rocker	A-Series Toggle	A-Series Flat Rocker	A-Series Raised Rocker
						
Page number	68	69	69	68	69	69
Interrupting Capacity DC	7,500A @ 65V DC	5,000A @ 32V DC	5,000A @ 32V DC	7,500A @ 65V DC	5,000A @ 32V DC	5,000A @ 32V DC
Interrupting Capacity AC	3,000A @ 120V AC 3,000A @ 250V AC	3,000A @ 125V AC 1,500A @ 250V AC	3,000A @ 125V AC 1,500A @ 250V AC	3,000A @ 120V AC 3,000A @ 120/240V AC 3,000A @ 250V AC	3,000A @ 240V AC	3,000A @ 240V AC
Max. Voltage DC	65V DC	32V DC	32V DC	65V DC	32V DC	32V DC
Max. Voltage AC	250V AC	250V AC	250V AC	250V AC	240V AC	240V AC
Poles	1	1	1	2	2	2
Amperages	5-50A	5-50A	5-50A	10-50A	10-50A	10-50A
Regulatory	CE marked, TUV certified, CSA certified, UL 1077	CE marked, TUV certified, CSA certified, UL 1077	CE marked, TUV certified, CSA certified, UL 1077	CE marked, TUV certified, CSA certified, UL 1077	CE marked, TUV certified, CSA certified, UL 1077	CE marked, TUV certified, CSA certified, UL 1077







AC/DC Military Grade and C-Series Circuit Breakers

Product Style	A-Series COTS	C-Series UL-489	C-Series UL-489	C-Series Toggle	C-Series Toggle	C-Series Flat Rocker
						
Page number	67	67	67	70	70	71
Interrupting Capacity DC	7500A	5000A	5000A	10,000A @ 80V DC	10,000A @ 80V DC	5,000A @ 32V DC
Interrupting Capacity AC	1500A	5000A	5000A	5,000A @ 125V AC 5,000A @ 250V AC	5,000A @ 125V AC 5,000A @ 250V AC	3,000A @ 120V AC 3,500A @ 240V AC
Max. Voltage DC	65V DC	-	-	80V DC	80V DC	32V DC
Max. Voltage AC	-	250V AC	250V AC	250V AC	250V AC	240V AC
Poles	2	2	2	1	1	1
Amperages	5-50A	10-50A	10-50A	5-100A	100A	5-100A
Regulatory	--	--	--	--	SAE J1171, UL 1500, ISO 8846	CE marked, SAE J1171, UL 1500, ISO 8846, CSA certified, UL 1077







DC C-Series Circuit Breakers

Product Style	C-Series Toggle	C-Series Flat Rocker	C-Series Toggle	C-Series Flat Rocker
				
Page number	70	71	70	71
Interrupting Capacity	5,000A @ 65V DC	5,000A @ 48V DC	5,000A @ 65V DC	5,000A @ 48V DC
Max. Voltage	65V DC	48V DC	65V DC	48V DC
Poles	2	2	3	3
Amperages	150-200A	150-200A	250-300A	250-300A
Regulatory	--	--	--	--

AC C-Series Circuit Breakers

Product Style	C-Series Toggle	C-Series Raised Rocker	C-Series Flat Rocker	C-Series Toggle	C-Series Raised Rocker	C-Series Flat Rocker
						
Page number	70	71	71	70	71	71
Interrupting Capacity	5,000A @ 125/250V AC 5,000A @ 250V AC	5,000A @ 120/240V AC 5,000A @ 240V AC		5,000A @ 125/250V AC 5,000A @ 250V AC	5,000A @ 120/240V AC 5,000A @ 240V AC	
Max. Voltage	250V AC	240V AC	240V AC	250V AC	240V AC	240V AC
Poles	2	2	2	3	3	3
Amperages	30-100A	30-100A	30-100A	50-100A	50-100A	50-100A
Regulatory	--	CE marked, TUV certified, CSA certified, UL 1077		--	CE marked, TUV certified, CSA certified, UL 1077	

AC GFCI Branch and ELCI Main Circuit Breakers

Product	GFCI Branch	ELCI Main	ELCI Main	ELCI Main	ELCI Main	ELCI Main		
								
Page number	73	73	73	73	73	3091* (73)	3092* (73)	3093† (73)
Interrupting Capacity	5,000A	5,000A	5,000A	5,000A	5,000A	5,000A	5,000A	5,000A
Nominal Voltage	120V per pole	120V per pole	120V per pole	120V per pole	120/240V per pole	230V per pole		240V per pole
Amperage	15A	30A	30A	50A	50A	16A	32A	50A
Leakage Trip Amps	5mA	30mA	30mA	30mA	30mA	30mA	30mA	30mA
Regulatory	UL 1077, UL 943 Class A	UL 1077, UL 943 Class A, UL 1500	UL 1077, UL 943 Class A, UL 1500	UL 1077, UL 943 Class A, UL 1500	UL 1077, UL 943 Class A, UL 1500	UL 1077, UL 943 Class A, UL 1500	UL 1077, UL 943 Class A, UL 1500	UL 1077, UL 943 Class A, UL 1500

* 230V AC, Typical of Europe

† 240V AC, For isolation transformer applications

Water Resistant Contura Switches

Specifically manufactured for use in Blue Sea Systems Contura Water Resistant Panels



7929
Contura II



8230
Contura III



8282
Contura III

Use of non Blue Sea Systems Contura Switches will not maintain the water resistant ingress protection rating of Blue Sea Systems panels.

- Vibration, shock, thermoshock, moisture and salt spray resistant
- Mounts in Blue Sea Systems Contura Water Resistant Panels (p. 98) and Contura Switch Mounting Panels (p. 79)

Specifications

Amperage Max. Operating	20A @ 12V DC, 15A @ 24V DC
Amperage Operating Current	18 Milliamps
Lighted	LED rated 100,000 hours half-life
Seals	Internal and external gasket panel seal
Temperature Rating	-40°C to 85°C
Mounting Hole	1.45 in x 0.83 in (36.83 mm x 21.08 mm)

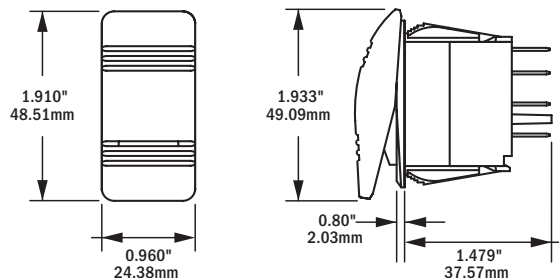
Regulatory

CE Marked

Meets UL 1500 and ISO 8846 external ignition protection requirements

PN Contura II Black	PN Contura III Gray	PN Contura III Black	Actuator Position to Light LED	Pole Throw	Action ()=momentary	LEDs
7929	8230	8282	ON	SPST	OFF-ON	1
7930	8231	8292	--	SPST	OFF-(ON)	0
7931	8232	8283	ON	SPDT	ON-OFF-ON	2
7932	8233	8284	ON	SPDT	(ON)-OFF-ON	1
7933	8234	8285	--	SPDT	(ON)-OFF-(ON)	0
7943	7944	7945	(ON)	SPDT	(ON)-OFF-ON	1
7934	8218	8287	ON	DPST	OFF-ON	1
7935	8219	8288	--	DPST	OFF-(ON)	0
7936	8220	8286	ON	DPDT	ON-OFF-ON	2
7937	8221	8289	ON	DPDT	(ON)-OFF-ON	1
7938	8222	8290	--	DPDT	(ON)-OFF-(ON)	0
7939	8275	--	ON	DPDT	ON-ON	2

See p. 81 for common applications



Related Products



Contura Circuit
Breaker Panels
p. 98-99



Contura Fuse Panels
p. 98-99

Water Resistant Contura Dimmer and M LVD Switches



8216



8291



7928

- Mounts in Blue Sea Systems Contura Water Resistant Panels (p. 98) and Contura Switch Mounting Panels (p. 79)
- Dimmer Switch Legend - BRIGHT and DIM
- M LVD Switch Legend-OVERRIDE and OFF
- Ignition Protected - safe for installation aboard gasoline powered boats

Specifications

Amperage Max. Operating	20A @ 12V DC, 15A @ 24V DC
Pole, Throw	SPDT
Action	(ON)-OFF-(ON)
Terminal Size	0.25 in (6.35 mm)
Terminal Type	Quick Connect Tab
Seals	Internal and External Gasket Panel Seal
Temperature Rating	-40°C to 85°C
Mounting Hole	1.45 x 0.83 in (36.83 x 21.08 mm)

Regulatory

CE Marked

PN	Used With	LEDs
8216	DeckHand Dimmer p. 13	--
8291	DeckHand Dimmer p.13	--
7928	Low Voltage Disconnect p. 28	1

Related Products



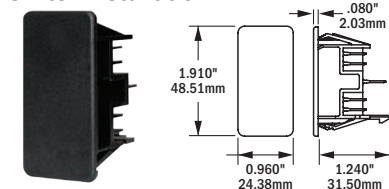
DeckHand
Dimmers
p. 13



m LVD
p. 28

Contura Switch Mounting Panel Plug

Covers Contura Switch mounting hole for future switch installation



PN	Description
8278	Contura Switch Mounting Panel Plug

8278

- For use with Contura Switch Mounting Panels

Contura Switch Actuators

Replaces actuators on Blue Sea Systems Contura Water Resistant Panels



8297



8294



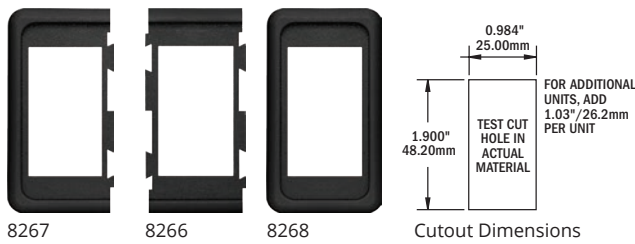
8293

- Mounts on any Blue Sea Systems Water Resistant Contura Switch

PN Gray	PN Black	Lenses
8299	8296	--
8297	8294	1
8298	8295	2
8293		Actuator Removal Tool

Contura Switch Mounting Panels

Modular design permits assembly in groups



- Mounting panels available in 1, 3, and 6 fixed position models
- Designed for mounting in 6 different panel thicknesses:
0.06 in (1.57 mm) 0.09 in (2.36 mm) 0.13 in (3.17 mm)
0.19 in (4.75 mm) 0.25 in (6.35 mm) 0.38 in (9.52 mm)

PN	Description	Width in (mm)	Height in (mm)
8267	End Mounting Panel	1.19 (30.23)	2.30 (58.42)
8266	Center Mounting Panel	1.03 (26.16)	2.30 (58.42)
8268	1 Position Mounting Panel	1.34 (34.04)	2.30 (58.42)
8259	3 Position Mounting Panel	3.40 (86.36)	2.30 (58.42)
8260	6 Position Mounting Panel	6.49 (164.85)	2.30 (58.42)

Remote Control Contura Switches

Provide remote switching of ML-Series Products

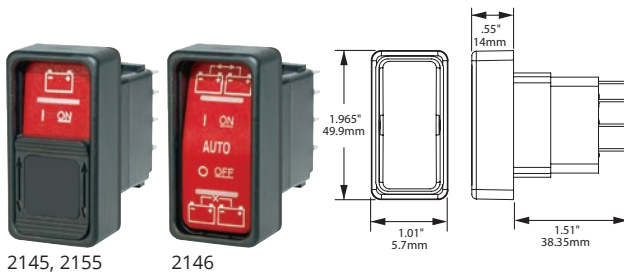
- Vibration, shock, thermoshock, moisture and salt spray resistant
- Lockout slide reduces the risk of accidental switching 2145 and 2155

Specifications

Amperage Max. Operating	20A @ 12V DC, 15A @ 24V DC
Amperage Operating Current	18mA
Temperature Range	-40°C - 85°C
Pole/Throw	SPDT
Lighting	LED rated 100,000 hours half-life
Seals	Internal and external gasket panel seal
Mounting Hole	1.45" x 0.83" (36.83 mm x 21.08 mm)

Regulatory

Meets UL 1500 and ISO 8846 external ignition protection requirements
IP67 – protected against immersion up to 1 meter for 30 minutes



PN	For Use With:	Pole Throw	Action ()=momentary
2145	ML Series 7700 and 7702 (p. 30)	SPDT	(ON)-OFF-(ON)
2146	ML-Series 7620, 7622, 7621, and 7623 (p. 39)	SPDT	ON-OFF-ON
2155	ML Series 7713 and 7717 (p. 30)	SPDT	ON-ON

Related Products



ML Series RBS
p. 30

ML Series ACR
p. 39

Remote Control Switch 360 Panels

Use with ML-Series Remote Battery Switches
or Automatic Charging Relays

- Backlit labels
- Lockout slides
- Square format label set 4218 (p. 138)



1147 Switches: 2145 (2); 2146 (1)

1148 Switches: 2145 (3)

PN	Description	Max. Volts	Width in (mm)	Height in (mm)	Depth in (mm)
1147	2 RBS and 1 ACR switch panel	24V DC	4.88 (123.83)	4.75 (120.65)	2.00 (50.80)
1148	3 RBS switch panel	24V DC	4.88 (123.83)	4.75 (120.65)	2.00 (50.80)
1520	Blank switch panel accepts 3 Switches	--	4.88 (123.83)	4.75 (120.65)	0.125 (3.175)

360 Panel Rocker Switches

Provides switching options for different configurations

Specifications

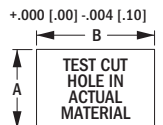
Amperage Max. Operating	See table below
Single Pole Terminal	0.187 in (4.80 mm) Quick Connect Tabs
Double Pole Terminal	6.00 in (152.00 mm) Wire Leads

PN	Pole-Throw	Terminal Type	image	Action () = Momentary	Amperage Maximum Operating
					12V DC 24V DC 125V AC 250V AC
7480	SPST	Quick Connect	1	OFF-ON	10A 10A 10A 10A
7481	SPST	Quick Connect	1	OFF-(ON)	10A 10A 12A 6A
7482	SPDT	Quick Connect	2	ON-OFF-ON	10A 8A 8A 8A
7483	SPDT	Quick Connect	2	(ON)-OFF-ON	10A 8A 8A 8A
7484	SPDT	Quick Connect	2	(ON)-OFF-(ON)	10A 8A 8A 8A
7485	SPDT	Quick Connect	4	(ON)-OFF-(ON)	10A 8A 8A 8A
7490	DPST	Wire Leads	1	OFF-ON	5A 5A 8A 4A
7491	DPDT	Wire Leads	3	ON-ON	5A 5A 8A 4A
7492	DPDT	Wire Leads	2	ON-OFF-ON	5A 5A 8A 4A
7493	DPDT	Wire Leads	3	ON-(ON)	5A 5A 8A 4A
7494	DPDT	Wire Leads	2	(ON)-OFF-ON	5A 5A 8A 4A
7495	DPDT	Wire Leads	2	(ON)-OFF-(ON)	5A 5A 8A 4A



Recommended Panel Opening

PANEL THICKNESS	A	B
.030" (.76mm)-.050" (1.27mm)	.508" (12.90mm)	.756" (19.20mm)
.050" (1.27mm)-.078" (1.98mm)	.508" (12.90mm)	.764" (19.40mm)
.078" (1.98mm)-.125" (3.17mm)	.508" (12.90mm)	.780" (19.81mm)



Dual Bilge Pump 360 Panel

Controls two bilge pumps with restricted-off circuit breakers and manual override switches

- Controls two bilge pumps
- Restricted-OFF circuit breakers provide 24-hour circuit protection to the bilge pump float switch.
- On-indicating LED indicates power is available at the bilge pump float switch.
- Manual Override switch with on-indicating LED provides visual indication pump is running; also illuminates when pump is running as a result of float switch operation.



1522

PN	Description	Width in (mm)	Height in (mm)
1522	Dual Bilge Pump Control Panel	4.88 (123.83)	4.75 (120.65)

WeatherDeck® Toggle Switches

For use in WeatherDeck® Waterproof Panels

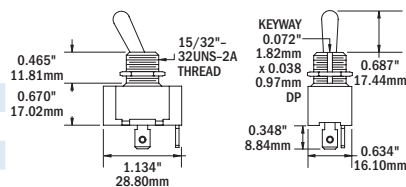


- Manufactured for use in WeatherDeck® Waterproof Panels (p. 96)
- Nickel-plated brass and phenolic non-corrosive construction

Specifications

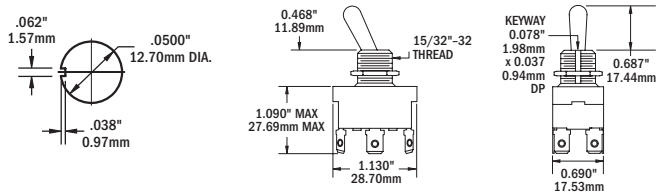
	4150-4154	4155
Amperage Max. Operating	10A @ 250V AC 15A @ 125V AC 15A @ 12V DC	- - 5A @ 30V DC
Voltage Max. Operating	250V AC	30V DC
Terminal Size	0.25 in (6.35 mm)	0.25 in (6.35 mm)
Terminal Type	Quick Connect Tab	Quick Connect
Tab		

PN	Pole/Throw	Action () = Momentary
4150	SPST	OFF-ON
4151	SPST	OFF-(ON)
4152	SPDT	ON-OFF-ON
4153	SPDT	(ON)-OFF-ON
4154	SPDT	(ON)-OFF-(ON)
4155	DPDT	ON-OFF-ON



4150-4154

Cutout Dimensions



4155

WeatherDeck® Toggle Switch Boot

Replaces boots found on all WeatherDeck® panels



4138

- For mounting on WeatherDeck® Toggle Switches above
- UV resistant material resists discoloration and cracking
- Rated IP67 – protected against immersion up to 1 meter for 30 minutes

Specifications

Thread Material	Nickel Plated Brass
Thread	15/32"-32UNS-2A

Related Products



WeatherDeck® Circuit Breaker Panels
p. 96



WeatherDeck® Fuse Panels
p. 96



WeatherDeck® Switch Only Panels
p. 96

Panel Switches

Mounts in an A-Series toggle circuit breaker aperture to provide multiple throw and switch configurations when circuit protection is provided elsewhere

- Ideal for generator starters, bilge pumps, horns, wipers, engine controls and other applications that require switching action other than ON-OFF or different pole configuration separate from circuit protection
- For use with A-Series Toggle Circuit Breaker Mounting Panel (p. 68)
- Supplied with mounting adapter for standard 5/8" circuit breaker mounting hole
- Nickel-plated brass and phenolic non-corrosive construction



8204

8200

Specifications

	Toggle Switches	Push Button Switch
Amperage Max. Operating	10A @ 250V AC 15A @ 125V AC 15A @ 32V DC	3A @ 250V AC 6A @ 125V AC 6A @ 32V DC
Terminal Size	0.25 in (6.35 mm)	0.25 in (6.35 mm)
Terminal Type	Quick Connect Tab	Quick Connect Tab
Actuator Color	White	White

PN	Actuator	Pole/Throw	Action () = Momentary
8200	Push Button	SPST	OFF-(ON)
8204	Toggle	SPST	OFF-ON
8205	Toggle	SPST	OFF-(ON)
8206	Toggle	SPDT	ON-OFF-ON
8207	Toggle	SPDT	(ON)-OFF-ON
8208	Toggle	SPDT	(ON)-OFF-(ON)
8209*	Toggle	DPST*	OFF-ON-(ON) OFF-OFF-(ON)
8210	Toggle	DPST	OFF-ON
8211	Toggle	DPDT	ON-OFF-ON
8212	Toggle	DPDT	(ON)-OFF-ON

* Progressive two circuit switch - maintains circuit one while momentarily switching circuit two

360 Panel Adapters and Plugs

Adapters allow mounting alternative switches and circuit breakers in the flat rocker aperture. Plugs fill empty flat rocker apertures.



4111

4112

4119

4116

4117

PN	Description
4111	Adapts Push Button Reset-Only Circuit Breaker (p. 62)
4112	Adapts A-Series Toggle Circuit Breaker (p. 68) and Panel Switch
4119	Adapts Rocker Switch (p. 79)
4116	Panel Plug fills flat rocker circuit breaker aperture
4117	Panel Plug fills 360 Panel Rocker Switch aperture
8037	Panel Plugs fill Toggle Circuit Breaker aperture (6 pack)

Switch Comparison

Switch Type and Action Legend

SPST Single Pole, Single Throw:

Turns a single circuit on and off.

SPDT Single Pole, Double Throw:

Turns one of two circuits on.
















DPST Double Pole, Single Throw:

Turns two circuits on at the same time.

DPDT Double Pole, Double Throw:

Turns one circuit in each of 2 pairs of circuits.

- Center Terminal Switch Lever () = Momentary
- Terminal
- Off Position

Switch Type and Action		Common Applications	p. 78	p. 78	p. 78	p. 79	p. 79	p. 80	p. 80	p. 80
	OFF-ON	Lights	7929	8230	8282	-	7480	4150	--	8204
	OFF-(ON)	Horn or Windshield wipers	7930	8231	8292	-	7481	4151	8200	8205
	ON-OFF-ON	Combining nav lights or anchor light with independent bulbs	7931	8232	8283	2146	7482	4152	--	8206
	(ON)-OFF-ON	Windshield wipers LED - ON	7932	8233	8284	--	7483	4153	--	8207
		Bilge pumps LED - (ON)	7943	7944	7945	--	--	--	--	--
	ON-ON	Control switch for SafetyHub 250 and ML-Series RBS 7712 and 7714	--	--	--	2155	--	--	--	--
	(ON)-OFF-(ON)	Intermittent wiper, Trim tabs, Control switch for ML-Series RBS except 7712 and 7714	7933	8234	8285	2145	7484, 7485	4154	--	8208
	OFF-ON	Navigational lights	7934	8218	8287	--	7490	--	--	8210
	OFF-(ON)	Wipers or horn	7935	8219	8288	--	--	--	--	--
	OFF-ON-(ON) OFF-OFF-(ON)	Combining nav lights and anchor lights with shared switch	--	--	--	--	--	--	--	8209
	ON-OFF-ON	Combining nav lights with anchor light with shared bulb	7936	8220	8286	--	7492	4155	--	8211
	(ON)-OFF-ON	Dual wipers	7937	8221	8289	--	7494	--	--	8212
	(ON)-OFF-(ON)	Power operated hatches	7938	8222	8290	--	7495	--	--	--
	ON-(ON)	Bilge pump with 2 circuits	--	--	--	--	7493	--	--	--
	ON-ON	Switching between shunts or current transformers with one meter	7939	8275	--	--	7491	--	--	--

CONNECTORS & INSULATORS

Connectors and BusBars are the backbone of every electrical system and safely keep current flowing.

Blue Sea Systems connectors and busbars reduce heat and improve efficiency and reliability in a boat's electrical system using the features below:

Tin-plated copper buses provide maximum conductivity and corrosion resistance.

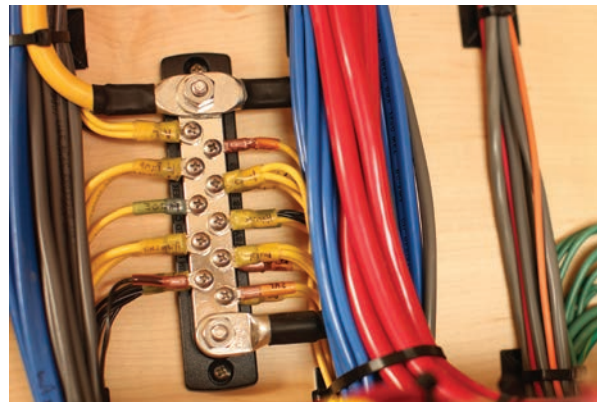
Insert-molded stainless steel studs eliminate the need for securing nuts and allow high torquing for excellent electrical contact.

UL 94-V0 rated base materials resist high heat.

Terminal Screws incorporate stainless steel split ring lock washers and captive star-type lock washers keep connections tight in high vibration environments.

One-Piece Serrated Flange Nuts ensure correct and secure connections which do not cause resistance.

Insulating covers meet ABYC and USCG insulation requirements.



CONNECTORS & INSULATORS



BusBars	84-86, 91
Terminal Blocks	87, 91
PowerBars	88-89, 91
PowerPost Connectors	90-91
Feed Through Connectors	90-91
CableCaps	92
CableClams	93

EarthRoamer builds vehicles that go beyond the road's end.

They rely on Blue Sea Systems electrical products, including **BusBars**, to keep their systems functioning.

MiniBus - 100A Common BusBars

Provides busing for limited space applications

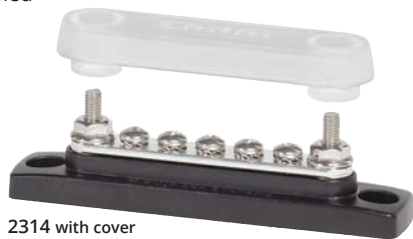
- One-piece serrated flange nut ensures correct and secure connections

Specifications

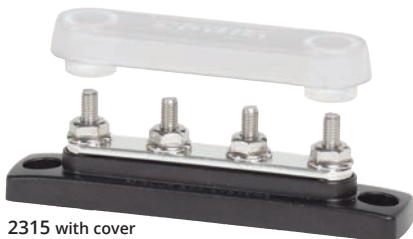
Continuous Rating	100A AC/DC
Voltage Max. Operating	300V AC/48V DC
Mounting Holes	Accepts #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

Regulatory

CE Certified



2314 with cover
2304 without cover



2315 with cover
2305 without cover

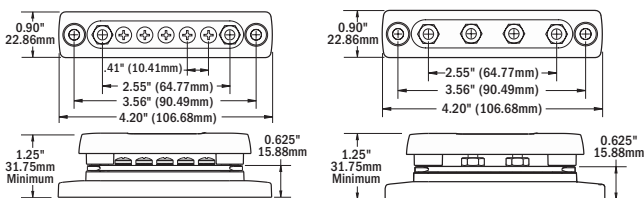


2306 is DC only rated.
Mounting holes accept #8 screws



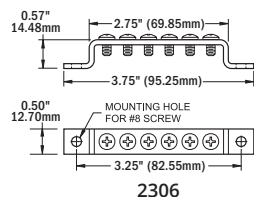
2713

PN	Cover	Terminal Screws	Terminal Studs
2304	--	5 × #8-32	2 × #10-32
2314	Yes	5 × #8-32	2 × #10-32
2305	--	--	4 × #10-32
2315	Yes	--	4 × #10-32
2306	--	6 × #8-32	--
2713	Cover For MiniBus 2304 and 2305		



2304, 2314

2305, 2315



2306

Battery Terminal Mount BusBars

VIDEO ▶

Easily add positive and negative busbars to the battery terminals

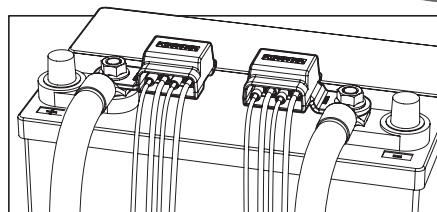
- Easily add positive and negative busbars directly to a threaded-post battery terminal
- Tin-plated pure electrical copper for maximum conductivity
- Insulating covers meet ABYC/USCG insulation requirements
- Screw terminals for securing wires
- 2340 Includes four 16-14 AWG and four 12-10 AWG Nylon Insulated ring terminals

Specifications

Continuous Rating	100A DC
Voltage Max. Operating	32V DC
Bus Material	Tin-Plated Copper C11000
Mounting Thru-hole	Clearance for 3/8" (M10) stud
Screw Terminal	#8-32 Screws with Captive Star Lock washer



PN	Description
2340	Positive + Negative
2341B	Positive
2342B	Negative



Related Products



ST Blade Battery Terminal Mount Fuse Block Kit
p. 49

DualBus - 100A Common BusBars

Combines two buses on one block

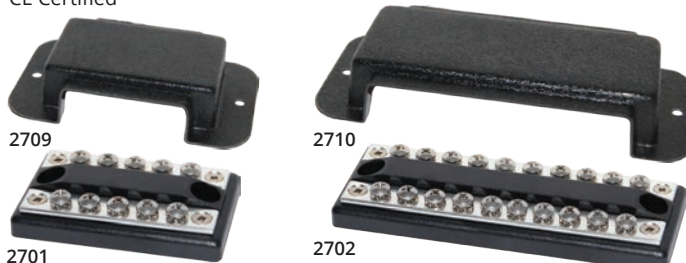
- Combines negative and positive buses for DC Systems and neutral and ground buses for AC Systems

Specifications

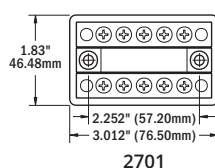
Continuous Rating	100A AC/DC
Voltage Max. Operating	300V AC/48V DC
Bus Material	Tin-Plated Copper C11000

Regulatory

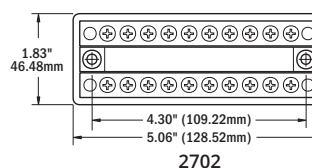
CE Certified



PN	Cover	Terminal Screws	Mounting Holes
2701	--	5 per bus × #8-32	Accept #10 (M5) Screws
2702	--	10 per bus × #8-32	Accept #10 (M5) Screws
2709	Cover for BusBar 2701		
2710	Cover for BusBar 2702		



2701



2702

150A Common BusBars

Insert-molded stainless steel studs eliminate the need for securing nuts and allow high torquing for excellent electrical contact

- For positive distribution and for the collection of negative or AC ground circuits
- One-piece serrated flange nut ensures correct and secure connections

Specifications

Continuous Rating	130A AC/150A DC
Voltage Max. Operating	300V AC/48V DC
Mounting Holes	Accepts #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

Regulatory

CE Certified

PN	Cover	Terminal Screw	Terminal Stud
2301	--	10 × #8-32	2 × 1/4"-20
2300	Yes	10 × #8-32	2 × 1/4"-20
2302	--	20 × #8-32	2 × 1/4"-20
2312	Yes	20 × #8-32	2 × 1/4"-20
2303	--	--	4 × 1/4"-20
2307	Yes	--	4 × 1/4"-20
2715	Cover For BusBar 2301 and 2303		
2716	Cover For BusBar 2302		

Note: 2715 replaces 2706, 2716 replaces 2707



2715



2716



2300 with cover
2301 without cover



2307 with cover
2303 without cover



2312 with cover
2302 without cover

DualBus Plus - 150A Common BusBars

Secure, clear polycarbonate cover snaps on easily to meet ABYC insulation requirements

- Combines negative and positive buses on one block
- Cover release buttons
- One-piece stainless flange nuts ensure safe and secure connections

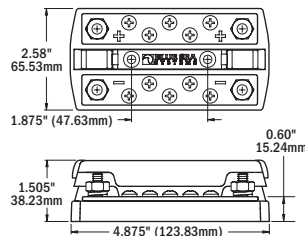


2722

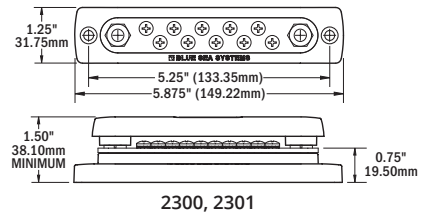
Specifications

Continuous Rating	130A AC/150A DC
Voltage Max. Operating	300V AC/48V DC
Mounting Holes	Accept #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

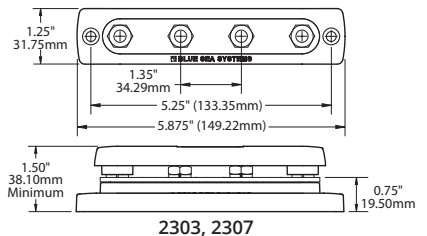
PN	Terminal Screws	Terminal Studs
2722	5 per bus × #10-32	2 per bus × 1/4"-20 Stud
2723	5 per bus × #10-32	2 per bus × 5/16"-18 Stud



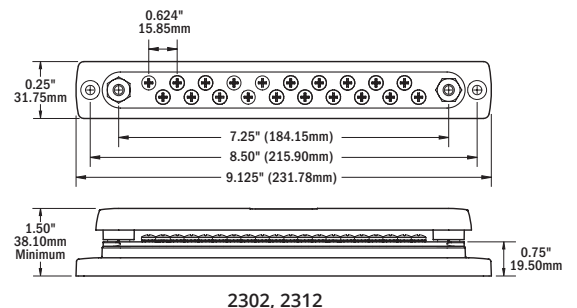
2722, 2723



2300, 2301



2303, 2307



2302, 2312

MaxiBus -250A Common BusBars

Now with insert-molded stainless steel studs and optional fully enclosed insulating base and cover

- Insulating cover with breakouts for easy wire access
- Insulating cover meets ABYC insulation requirements
- One-piece serrated flange nuts ensure correct and secure connections

Specifications

Continuous Rating	250A AC/DC
Voltage Max. Operating	300V AC/48V DC
Mounting Holes	Accepts #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

Regulatory

CE Certified



2128



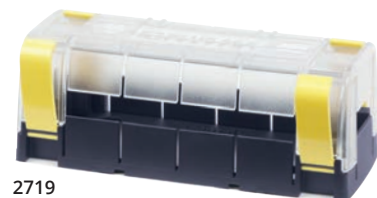
2105



2127



2126



2719

Mounting holes provided for: 285 Series Surface Mount Circuit Breakers and DC Shunts



2718

Mounting holes provided for: PowerBar 600A Common BusBar

2719 Related Products



285 Series Circuit Breakers
7180-7189
p. 64



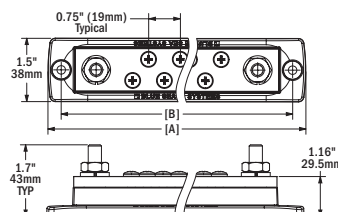
DC Shunts
p. 133

2718 Related Product

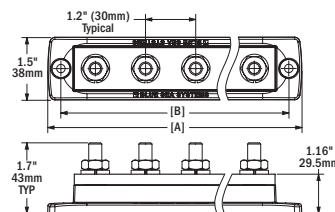


PowerBar 600A
Common BusBar 2104
p. 89

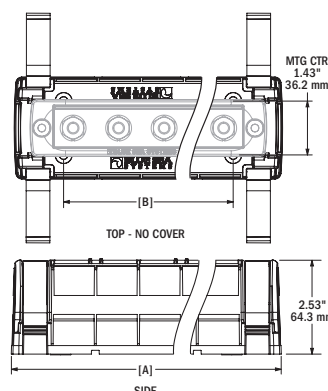
PN	Terminal Studs	Terminal Screws	[A] Length in (mm)	[B] Mounting Centers in (mm)
2105	2 × 5/16"-18	12 × #10-24	7.75 (197.00)	7.125 (181.00)
2126	6 × 5/16"-18	-	7.75 (197.00)	7.125 (181.00)
2718	Cover for 2105 and 2126		8.78 (223.10)	5.41 (137.30)
2127	4 × 5/16"-18	-	5.875 (149.00)	5.25 (133.00)
2128	2 × 5/16"-18	6 × #10-24	5.875 (149.00)	5.25 (133.00)
2719	Cover for 2127 and 2128		6.70 (170.00)	4.10 (104.10)



2128, 2105



2127, 2126



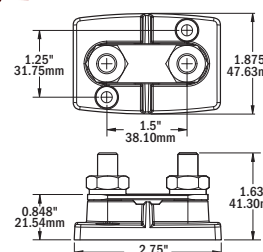
2719 and 2718

PowerBar Common BusBars

Provides compact high-amp busing with 3/8" terminal studs



2019



Specifications

Continuous Rating	up to 200 Amps
Voltage Max. Operating	48V DC
Mounting Holes	Accepts #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

Regulatory

CE Certified

PN	Terminal Studs	Insulators
2019	2 × 3/8"-16	Yes
2020	2 × 3/8"-16	--

Terminal Blocks

Fully insulated independent terminal blocks to isolate circuits

- Each screw pair is one isolated circuit
- Terminal Block Jumpers allow creation of common circuits
- Closed back design insulates power from the mounting surface

Specifications

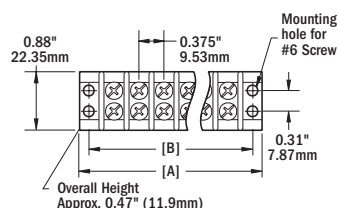
Bus Material Tin-Plated Brass

Regulatory

CE Certified



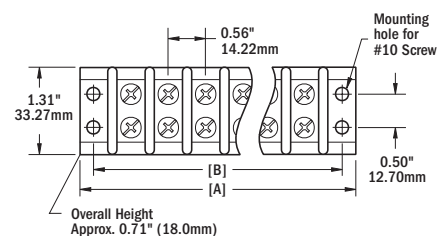
2406



2402-2410



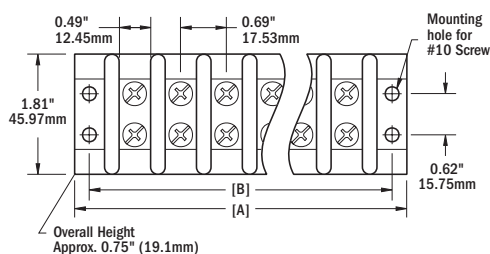
2506



2502-2512



2606



2602-2610

PN	Circuits	AC/DC Amps	AC/DC Volts	Terminal Screw	[A] Length in (mm)	[B] Mounting Centers in (mm)
2402	2	20A	300V	#6	1.41 (35.81)	1.13 (28.70)
2404	4	20A	300V	#6	2.16 (54.86)	1.88 (47.75)
2406	6	20A	300V	#6	2.91 (73.91)	2.63 (66.80)
2408	8	20A	300V	#6	3.66 (92.96)	3.38 (85.85)
2410	10	20A	300V	#6	4.41 (112.01)	4.13 (104.90)
2502	2	30A	600V	#8	2.10 (53.34)	1.69 (42.93)
2504	4	30A	600V	#8	3.22 (87.79)	2.81 (71.37)
2506	6	30A	600V	#8	4.34 (110.24)	3.93 (99.82)
2508	8	30A	600V	#8	5.46 (138.68)	5.05 (128.27)
2510	10	30A	600V	#8	6.58 (167.13)	6.17 (156.72)
2512	12	30A	600V	#8	7.70 (195.58)	7.29 (185.17)
2602	2	65A	600V	#10	2.50 (63.49)	2.06 (52.32)
2604	4	65A	600V	#10	3.88 (98.55)	3.44 (87.38)
2606	6	65A	600V	#10	5.26 (133.61)	4.82 (122.43)
2608	8	65A	600V	#10	6.64 (168.67)	6.20 (157.48)
2610	10	65A	600V	#10	8.02 (203.73)	7.58 (192.53)

Terminal Block Jumpers

Combines independent circuits on Terminal Blocks (above) and ST-Blade Fuse Blocks 5035 and 5037 (p. 50)

Specifications

Bus Material Nickel-Plated Brass

Continuous Amperage Equivalent to matching block

PN	Description	Retail Pack
9218	For use with 20A Terminal Blocks	5
9217	For use with 30A Terminal Blocks	5
9216	For use with 65A Terminal Blocks	5



9218



9217



9216

PowerBar 1000 - 1000A Common BusBar VIDEO ▶

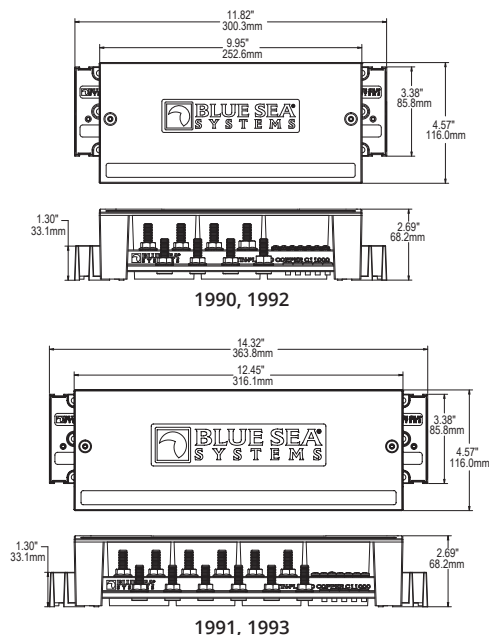
Complex wiring systems require a single point to consolidate large and small conductors. The PowerBar 1000 offers a 1,000 Amp busbar with various size studs and screws to connect conductors and fuse blocks. A snap-on insulating cover is included in retail packages and can be purchased separately when purchased in bulk.

- 1,000 Amp busbar for large complex wiring systems
- Tin plated pure electrical copper for maximum conductivity
- Stepped bus design offers two elevations for conductors which doubles the density of the wire loom compared to traditional bus bars
- Busbar and fuse block elevations match common fuse blocks allowing for multiple fuse block attachment, eliminating the need for connecting cables
- One-piece serrated flange nuts ensure correct and secure connections
- Stainless steel 8-32 screws with captive lock washers for securing smaller gauge wires
- Busbar may be cut to a shorter length to accommodate constricted spaces
- Bi-directional busbar end caps allow the ganging of additional busbars
- Snap on insulating cover meets ABYC and USCG requirements and includes label recess
- Models available to accommodate either 3/8" or 5/16" terminals

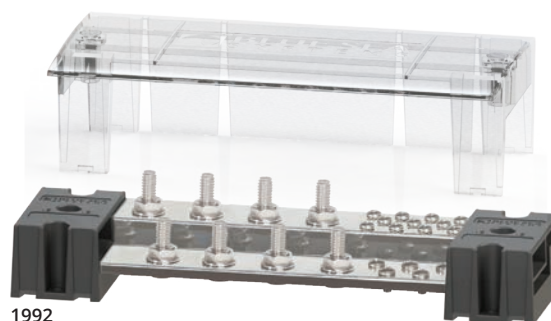
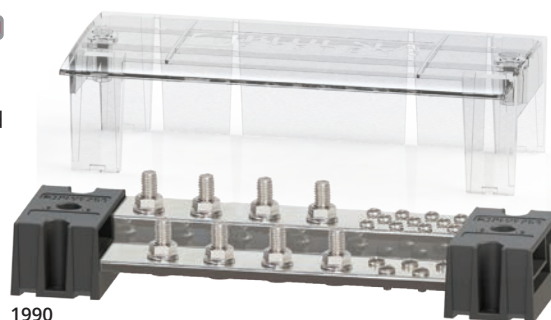
Specifications

Continuous Rating	1000A
Voltage Max. Operating	See bluesea.com
Mounting Holes	Accepts #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

PN	Cover	Terminal Studs	Terminal Screws
1990	Yes	8 x 3/8" - 8	5 x #10-24, 11 x #8-32
1991	Yes	12 x 3/8" - 12	5 x #10-24, 11 x #8-32
1992	Yes	8 x 5/16" - 8	5 x #10-24, 11 x #8-32
1993	Yes	12 x 5/16" - 12	5 x #10-24, 11 x #8-32
2730B	PowerBar 1990 and 1992 Cover	--	--
2731B	PowerBar 1991 and 1993 Cover	--	--



Related Products



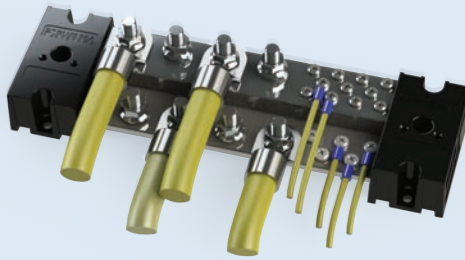
Snap on insulating covers included in retail packages and can be purchased separately when busbars are purchased in bulk.

TECH tip™

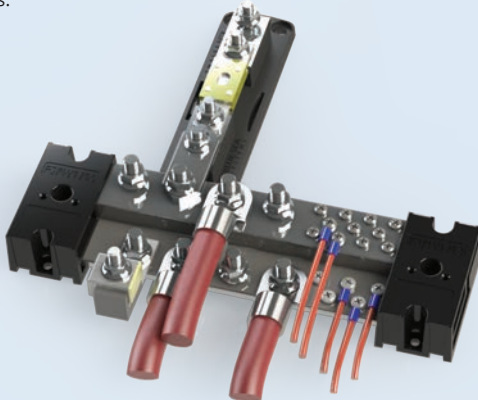
PowerBar 1000 Explained

The PowerBar 1000 offers mounting and application flexibility. Coupled with security features like serrated flange nuts and an insulating cover, the PowerBar 1000 is an organized and secure termination point for the boat or vehicle's critical electrical connections.

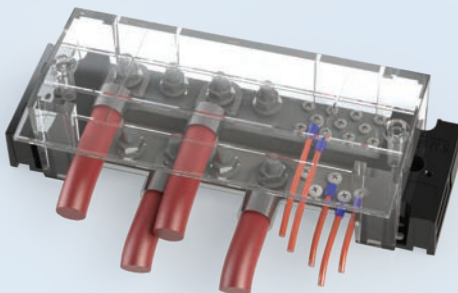
PowerBar 1000 used as a grounding bus and high density collecting point for both large and small gauge conductors.



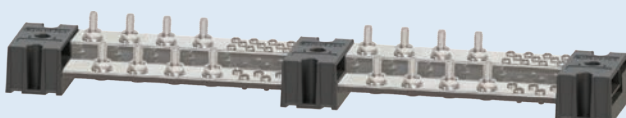
PowerBar 1000 used as a high amperage positive distribution bus for various types and sizes of fuses as well as high density collecting point for both large and small gauge conductors. Typically this configuration would include the snap on insulating cover but pictured without to better show fuse blocks.



PowerBar 1000 used as a positive distribution bus and high density collecting point for both large and small gauge conductors. Pictured with snap on insulating cover.



Gang two or more PowerBars together



PowerBar - 600A Common BusBars

Highest amperage BusBar with 3/8" terminal studs

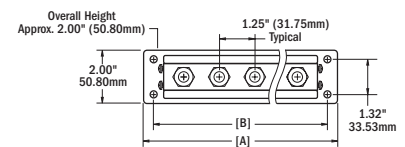


Specifications

Continuous Rating	545A AC/600A DC
Voltage Max. Operating	300V AC/48V DC
Mounting Holes	2104—Accepts 1/4" Screws 2107—Accepts #10 (M5) Screws
Bus Material	Tin-Plated Copper C11000

Regulatory

CE Certified



PN	Terminal Studs	Terminal Screws	[A] Length in (mm)	[B] Mounting Centers in (mm)
2104	4 x 3/8"-16	4 x #8-32	7.0 (177.8)	6.25 (158.74)
2107	8 x 3/8"-16	4 x #8-32	11.375 (288.93)	10.375 (263.53)
2708	Cover For 2104			

Related Products



MaxiBus Cover 2718
p. 86

PowerPost Cable Connectors

Insulated single stainless steel stud terminates multiple large conductors



- One-piece serrated flange nuts ensure correct and secure connections

Specifications

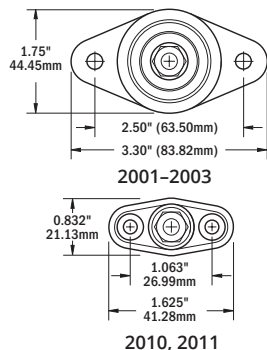
Continuous Rating	Not rated—amperage flows between terminals stacked on post and is determined by wire and terminals used.
Voltage Max. Operating	48V DC
Mounting Holes	Accepts #8 Screws (2010, 2011) Accepts 1/4" Screws (2001, 2002, 2003)

Regulatory

CE Certified

PN Terminal Stud

2010	#10-32 × 5/8"
2011	1/4"-20 × 3/4"
2001	1/4"-20 × 1-1/16"
2002	5/16"-18 × 7/8"
2003	3/8"-16 × 7/8"



2010, 2011

PowerPost Plus Cable Connectors

Enables connection of multiple smaller wires in spaces where a traditional bus bar may not fit



2103

- 150 Amp bus allows small wire connections at high amperage cable connections
- One-piece serrated flange nut ensures correct and secure connections

Specifications

Continuous Rating	150A DC
Voltage Max. Operating	48V DC
Mounting Holes	Accepts 1/4" Screws
Bus Material	Tin-Plated Copper

Regulatory

CE Certified

PN	Terminal Stud	Terminal Screws
2101	1/4"-20 × 1"	8 × #8-32
2102	5/16"-18 × 3/4"	8 × #8-32
2103	3/8"-16 × 3/4"	8 × #8-32

Dual PowerPost Cable Connectors

Provides a termination point for extending the length of outboard harnesses or other conductors

- Designed for connecting high amperage conductors
- 2018 is also designed for outboard engine installation when factory cables need to be extended
- One-piece serrated flange nuts ensure correct and secure connections

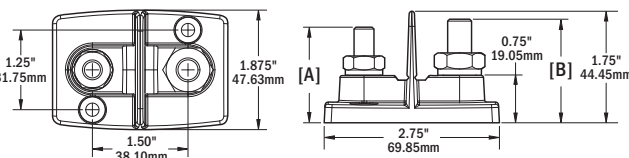
Specifications

Continuous Rating	Not rated—amperage flows between terminals stacked on post and is determined by wire and terminals used.
Voltage Max. Operating	48V DC
Mounting Holes	Accepts #10 (M5) Screws



2017

PN	Terminal Studs	Insulating Cover	Stud Height A in (mm)	Stud Height B in (mm)
2016	2 × 5/16"-18	Yes	1.50 (38.1)	1.50 (38.1)
2016100	2 × 5/16"-18	--	1.50 (38.1)	1.50 (38.1)
2017	2 × 3/8"-16	Yes	1.63 (41.3)	1.63 (41.3)
2017100	2 × 3/8"-16	--	1.63 (41.3)	1.63 (41.3)
2018	1 × 5/16"-18, 1 × 3/8"-16	Yes	1.50 (38.1)	1.63 (41.3)
2018100	1 × 5/16"-18, 1 × 3/8"-16	--	1.50 (38.1)	1.63 (41.3)



Terminal Feed Through Connectors

Eliminates chafe and provides strain relief when passing high current through hulls, decks and bulkheads

- Protects large cables that are subject to chafing when passed through holes
- The large terminals have a mounting face that can be gasketed or bedded to provide a water-tight installation
- One-piece serrated flange nut ensures correct and secure connections

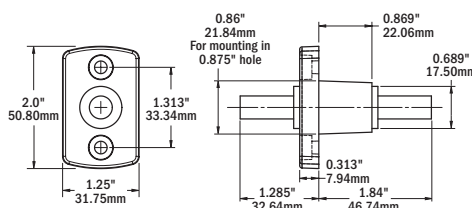
Specifications

Stud Material	Tin-Plated Copper Alloy
Mounting Holes	Accepts #10 (M5) Screws

Regulatory

Rated IP66—protected against powerful water jets

PN	Terminal Stud	Amps	Volts	Color
2201	5/16"-18	250A	48V	Black
2202	5/16"-18	250A	48V	Red
2203	3/8"-16	250A	48V	Black
2204	3/8"-16	250A	48V	Red




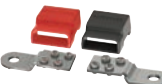












2201






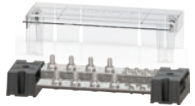









2202

Connector Comparison

Product	MiniBus 100A Common BusBars			Battery Terminal Mount BusBars	DualBus 100A Common BusBars		DualBus Plus 150A Common BusBars
							
Page Number	84	84	84	84	84	84	85
Continuous Rating	100A AC / 100A DC	100A AC / 100A DC	100A AC / 100A DC	100A DC	100A AC / 100A DC	100A AC / 100A DC	130A AC / 150A DC
Max. Voltage	300V AC / 48V DC	300V AC / 48V DC	300V AC / 48V DC	32V DC	300V AC / 48V DC	300V AC / 48V DC	300V AC / 48V DC
Terminal Screw	5 × #8-32	--	6 × #8-32	4 per bus × #8-32	5 per bus × #8-32	10 per bus × #8-32	5 per bus × #8-32
Terminal Stud	2 × #10-32	4 × #10-32	--	--	--	--	2 per bus × 1/4"-20 or 2 per bus × 5/16"-18
Insulating Cover	Cover available	Cover available	--	Included	Cover available	Cover available	Included

Product	150A Common BusBars			MaxiBus 250A Common BusBars			
							
Page Number	85	85	85	86	86	86	86
Continuous Rating	130A AC / 150A DC	130A AC / 150A DC	130A AC / 150A DC	250A AC/DC	250A AC/DC	250A AC/DC	250A AC/DC
Max. Voltage	300V AC 48V DC	300V AC 48V DC	300V AC 48V DC	300V AC 48V DC	300V AC 48V DC	300V AC 48V DC	300V AC 48V DC
Terminal Screw	10 × #8-32	20 × #8-32	--	6 × #10-24	12 × #10-24	--	--
Terminal Stud	2 × 1/4"-20	2 × 1/4"-20	4 × 1/4"-20	2 × 5/16"-18	2 × 5/16"-18	4 × 5/16"-18	6 × 5/16"-18
Insulating Cover	Cover available	Cover available	Cover available	Cover available	Cover available	Cover available	Cover available

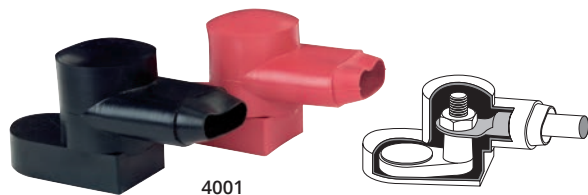
Product	PowerBar Common BusBar	Terminal Blocks			PowerBar 1000A	
						
Page Number	86	87	87	87	88	88
Continuous Rating	Determined by wire up to 200A	20A AC/DC	30A AC/DC	65A AC/DC	1000A	1000A
Max. Voltage	48V DC	300V AC/DC	600V AC/DC	600V AC/DC	see www.blueseas.com	see www.blueseas.com
Terminal Screw	--	#6	#8	#10	5 × #10-24, 11 × #8-32	5 × #10-24, 11 × #8-32
Terminal Stud	2 × 3/8"-16	--	--	--	8 × 5/16"-8 or 12 × 5/16"-8	8 × 3/8"-8 or 12 × 3/8"-8
Insulating Cover	Included	--	--	--	Included	Included

Product	PowerBar 600A Common BusBars		Terminal Feed Through Connectors	PowerPost Cable Connectors		PowerPost Plus Cable Connectors	Dual PowerPost Cable Connectors
							
Page Number	89	89	90	90	90	90	90
Continuous Rating	545A AC/600A DC	545A AC/600A DC	250A DC	Determined by wire and terminals		150A DC	Determined by wire and terminals
Max. Voltage	300V AC / 48V DC	300V AC / 48V DC	48V DC	48V DC	48V DC	48V DC	48V DC
Terminal Screw	4 × #8-32	4 × #8-32	--	--	--	8 × #8-32	--
Terminal Stud	4 × 3/8"-16	8 × 3/8"-16	5/16"-18 or 3/8"-16	1 × #10-32 or 1 × 1/4"-20	1 × 1/4"-20 or 1 × 5/16"-18 or 1 × 3/8"-16	1 × 1/4"-20 or 1 × 5/16"-18 or 1 × 3/8"-16	2 × 5/16"-18 or 2 × 3/8"-16 or 1 × 5/16"-18 and 1 × 3/8"-16
Insulating Cover	Cover available	--	--	Included	Included	Included	Included

Rotating CableCap Insulators

Insulates battery terminals which have integral wing nut posts

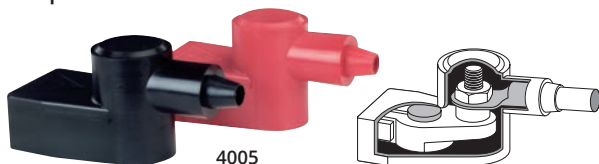
- Top rotates 360 degrees to allow cable entry from any angle



PN	Cable Size (AWG)	Color	Package
4001	All	Red/Black	Pair/Retail
9030B	All	Black	Bulk/Not for retail
9031B	All	Red	Bulk/Not for retail

Standard CableCap Insulators

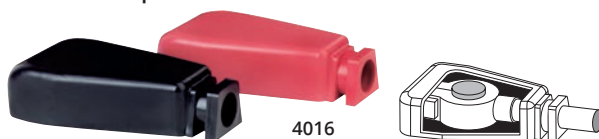
Insulates battery terminals which have added adapter terminals



PN	Cable Size (AWG)	Color	Package
4005	4, 2, 1	Red/Black	Pair/Retail
4006	1/0, 2/0	Red/Black	Pair/Retail
9038B	4, 2, 1	Black	Bulk/Not for retail
9039B	4, 2, 1	Red	Bulk/Not for retail
9040B	1/0, 2/0	Black	Bulk/Not for retail
9041B	1/0, 2/0	Red	Bulk/Not for retail

Automotive CableCap Insulators

Insulates battery terminals which have standard automotive posts



PN	Cable Size (AWG)	Color	Package
4016	4, 2, 1	Red/Black	Pair/Retail
4017	1/0, 2/0	Red/Black	Pair/Retail
9176B	1/0, 2/0	Red	Bulk/Not for retail
9177B	1/0, 2/0	Black	Bulk/Not for retail

PowerPost Insulator

Provides electrical insulation for single studs and large cables.

- Included with 2001, 2002, 2003, 2101, 2102, 2103, and 2019.



PN	Cable Size (AWG)	Color	Package
4004	6	Red	Retail

Square CableCap Insulators

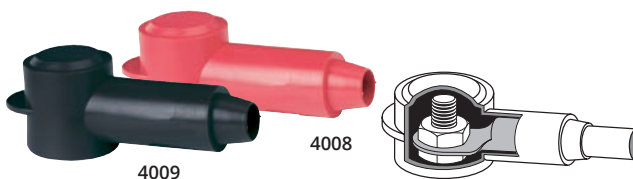
Insulates battery terminals which have in-line dual posts



PN	Cable Size (AWG)	Color	Package
4018	1/0	Red/Black	Pair/Retail
4019B	1/0	Red	Bulk/Not for retail
4020B	1/0	Black	Bulk/Not for retail

Stud CableCap Insulators

Insulates single stud on alternators, starters, windlasses and high amperage termination points

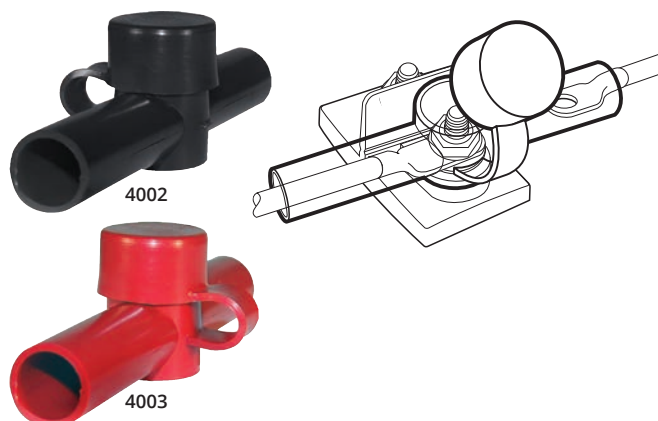


PN	Cable Size (AWG)	Color	Package
4008	18-10	Red	Retail/3
4009	18-10	Black	Retail/3
4010	8-4	Red	Retail/2
4011	8-4	Black	Retail/2
4012	2-2/0	Red	Retail/1
4013	2-2/0	Black	Retail/1
4014	3/0-4/0	Red	Retail/1
4015	3/0-4/0	Black	Retail/1

Dual Entry PowerPost Cable Insulators

Protects against accidental short circuits

- For use with Dual PowerPost Cable Connectors (p.90)

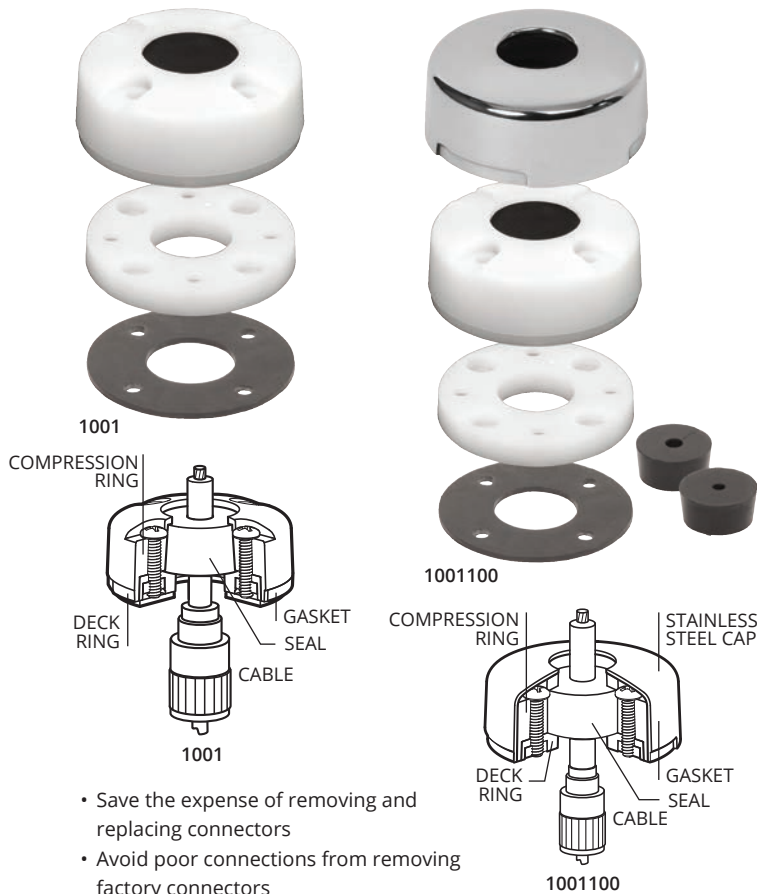


PN	Cable Size (AWG)	Cable Entry Size in (mm)	Color	Package
4002	up to 2/0	0.7 (17.8)	Black	Retail/1
4003	up to 2/0	0.7 (17.8)	Red	Retail/1

CableClams

VIDEO

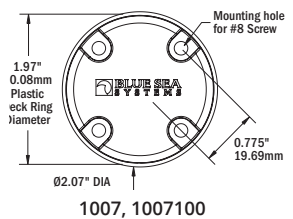
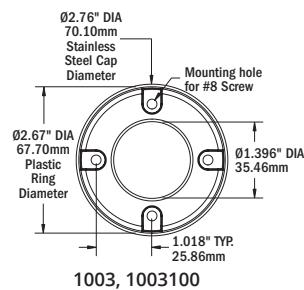
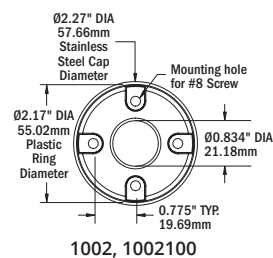
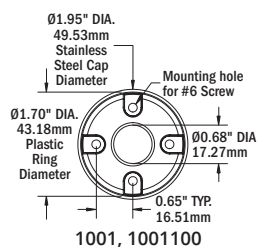
Provides a waterproof pass-through for antenna cables without requiring removal of the factory installed connector



- Save the expense of removing and replacing connectors
- Avoid poor connections from removing factory connectors
- Use 1001, 1001100 for GPS cables, 1002, 1002100 for VHF cables, 1003, 1003100 for Radar cables
- Pre-drilled and slit rubber seals for easier installation
- 1001100, 1002100, 1003100 includes a 316 stainless steel dress cap which conceals mounting hardware and matches other deck hardware
- Stainless steel fasteners included

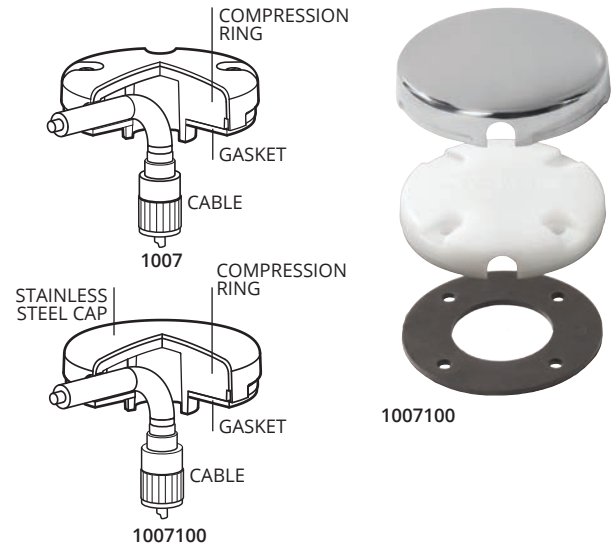
Specifications

Ring Material UV-Stabilized Thermoplastic
Seal Material UV-Stabilized Buna-N Rubber



Side-Entry CableClams with Stainless Steel Dress Cap

Provides a waterproof side-entry for cables without requiring removal of the factory installed connector



- Simple one-piece design for easy side-entry installations
- Low profile, contoured edge reduces the risk of tangling lines
- 1007100 includes a 316 stainless steel dress cap which conceals mounting hardware and matches other deck hardware
- Stainless steel fasteners included

Specifications

Ring Material UV-Stabilized Thermoplastic
Gasket Material UV-Stabilized Buna-N Rubber

PN	Seals Included	Max. Connector Diameter in (mm)	Max. Cable Diameter in (mm)	Dress Cap	Mounting Holes Accept
1001	--	0.68 (17.0)	0.31 (8.0)	--	#6 x 7/8" screws
1001100	3	0.68 (17.0)	0.31 (8.0)	Yes	#6 x 7/8" screws
1002	--	0.83 (21.0)	0.44 (11.0)	--	#8 x 7/8" screws
1002100	3	0.83 (21.0)	0.44 (11.0)	Yes	#8 x 7/8" screws
1003	--	1.40 (35.0)	0.56 (14.0)	--	#8 x 7/8" screws
1003100	1	1.40 (35.0)	0.56 (14.0)	Yes	#8 x 7/8" screws

PN	Max. Connector Diameter in (mm)	Max. Cable Diameter in (mm)	Dress Cap	Mounting Holes Accept
1007	1.00 (25.40)	0.28 (7.112)	--	#8 x 7/8" screws
1007100	1.00 (25.40)	0.28 (7.112)	Yes	#8 x 7/8" screws

POWER DISTRIBUTION

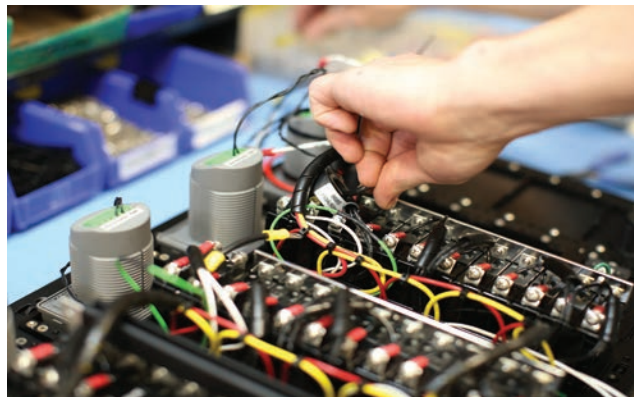
The power distribution panel is the heart of an electrical system. Blue Sea Systems manufactures panels suited for all size and distribution requirements of a vessel or vehicle.

WeatherDeck® Waterproof Panels are the ideal for installation in a very wet location. The panel face is IP67 waterproof and can be submerged one meter for 30 minutes. The unique square label design allows for 4 different mounting orientations for maximum versatility. An integrated toggle guard eliminates the risk of accidental switching.

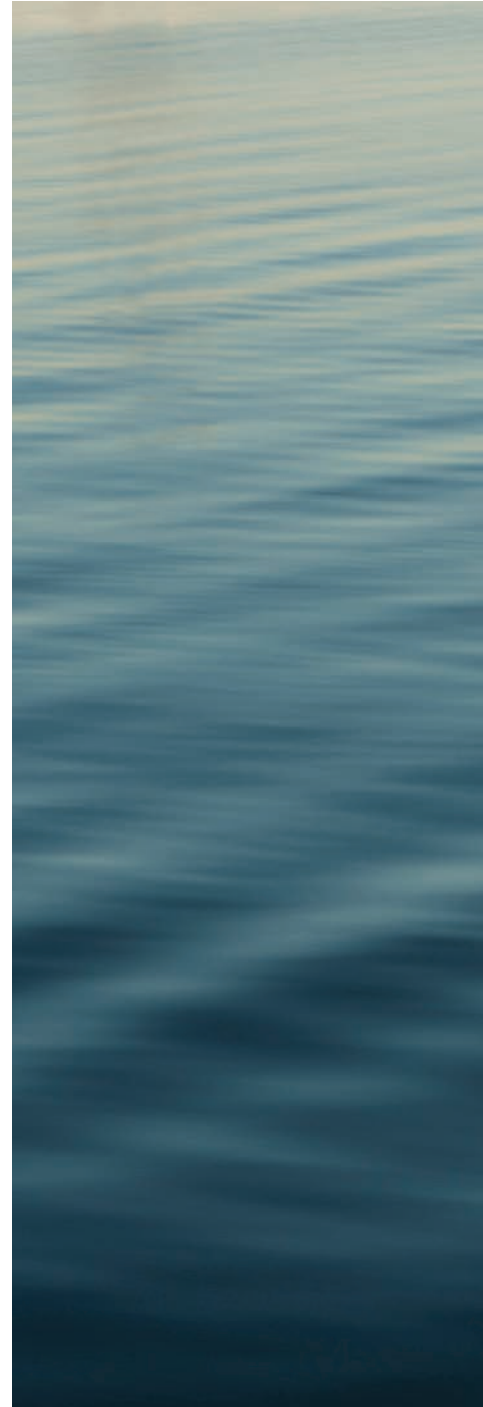
Contura Water Resistant Panels combine functionality and visual appeal into a IP66 water resistant panel. Each panel includes Contura switches with embedded LEDs for ON indication as well as non-backlit labels for circuit identification. Contura Panels are available in two styles and three different colors.

Traditional Metal Panels are styled to match existing panels found in many boats and vehicles. These panels utilize toggle circuit breakers for both circuit protection and switching. Individual LEDs provide ON-indication for each circuit. Many panels also include analog or digital meters for voltage or amperage measurement. Each panel is pre-wired for quick installation. With over 100 stock panels there is an option for any installation.

The 360 Panel System uses an open frame to mount a broad selection of modules, allowing multiple functions to be combined in a single panel. This innovative design offers a wide choice of panel features, can accommodate future changes and permits rapid assembly. With options ranging from battery management to source selection, the 360 Panel System provides unmatched design flexibility. The full versatility of 360 Panels is achieved through customization. Custom 360 Panels can be created using the online Panel Wizard which provides an easy way to select a panel frame, modules, circuit breaker amperage, and labels. 360 Custom Panels are built in Bellingham, Washington and ship within seven days of order receipt.



Custom panel being assembled in Bellingham, Washington



POWER DISTRIBUTION

WeatherDeck® Waterproof	96-97
Contura Switch Water Resistant	98-99
360 Panel System	100
Traditional Metal	101
DC Branch Circuit Breaker	102-105
AC Branch Circuit Breaker	106-107
AC RCBO Circuit Breaker	110
AC Source Selection	111-113
AC/DC Combination	114-115
Custom 360	116-121



Hinckley Yachts relies on Blue Sea Systems **Custom 360 Panels** for power distribution aboard their line of richly crafted, Maine-built boats, including the T34.

WeatherDeck® Waterproof Panels



Hunt Yachts installs the Blue Sea Systems WeatherDeck® Waterproof Panels on the Surfhunter 26 Center Console.

Designed For Extreme Weather Conditions

The WeatherDeck® Panels are Blue Sea Systems most waterproof panels and their contemporary appearance adds style to any boat. Available in switch only, fuse, and circuit breaker models, the WeatherDeck® Panels can be mounted in four orientations for maximum versatility.



Fuse Panel
ATO®/ATC® Fuses, switches, bicolored LEDs illuminate circuit labels to identify ON, OFF, or Blown circuits



Switch Only Panel
No circuit protection or illuminated circuit labels



Circuit Breaker Panel
Push Button Reset-Only Circuit Breakers, switches, green LEDs illuminate circuit labels

Style	WeatherDeck® Waterproof		
Model	Circuit Breaker	Fuse	Switch Only
Positions	4, 6, 8	2, 4, 6, 8	2, 4, 6, 8
Voltage Rating	12V or 24V DC	12V DC	12V or 24V DC
Label Format	Square	Square	Square
Backlight Labels	Backlit	ON indicating bicolored	-

Related Products



ATO® or ATC®
Fuses
p. 45



ST-Blade
Fuse Blocks
p. 55



ST-CLB
Circuit Breaker Blocks
p. 60



Push Button
Circuit Breaker
p. 62



Push Button
Circuit Breaker
Boot p. 61



OFF-ON
Toggle Switch
p. 80



OFF-ON
Toggle Switch Boot
p. 80



Square Format
Labels
p. 138

WeatherDeck® Waterproof Panels

Designed for open-cockpit and flybridge applications

- Fuse Model: Bicolored LEDs illuminate circuit labels to quickly identify OFF (Red), ON (Green), or Blown (No color) circuits
- Circuit Breaker Model: Green LEDs illuminate circuit labels
- Fuse and Circuit Breaker Models:
- Backlighting is compatible with DeckHand Dimmers (p. 13)
- Independent label backlighting allows switching and dimming
- Switch Only Model: No circuit protection or illuminated circuit labels
- Integrated switch guards reduce the risk of accidental switching
- Panels can be mounted in four different orientations
- Panel front rated IP67 when properly mounted with watertight mounting gasket
- UV stabilized weather-resistant faceplate snaps on and off providing access to components and concealing mounting screws
- Square Format Label Set 4215 included (p. 138)

Circuit Breaker Panel Specifications

Voltage Max. Operating	24 Volts DC
Amperage Max. Operating	15A @ 12V DC (per circuit) 9A @ 24V DC (per circuit)
Amperage Operating Current (backlight)	10mA/Illuminated Circuit
Panel Cumulative Rating	45A
Switch Rating 15 Amps Maximum	
Backlighting Voltage	12 or 24V DC
Backlighting Amperage Draw	10mA/Illuminated Circuit
Circuit Breaker Rating	15A

Fuse Panel Specifications

Voltage Max. Operating	12V DC
Amperage Max. Operating	15A @ 12V DC (per circuit)
Amperage Operating Current (backlight)	10mA/Illuminated Circuit
Panel Cumulative Rating	2 Position—30A 4 Position—60A 6 Position—90A 8 Position—100A
Switch Rating 15A Max.	
Backlighting Voltage	12V DC Nominal
Fuses Available	1–30A

Switch Only Panel Specifications

Voltage Max. Operating	24 Volts DC
Amperage Max. Operating	15A @ 12V DC (per circuit)
Switch Rating 15A Max.	

Regulatory

IP67—protected against immersion up to 1 meter for 30 minutes (see inside back cover)



4374 CLB Circuit breakers



4376 CLB Circuit breakers



4378 CLB Circuit breakers



4302 ATO®/ATC® Fuses
4303 Switch only, no backlight or fuses



4304 ATO®/ATC® Fuses
4305 Switch only, no backlight or fuses



4306 ATO®/ATC® Fuses
4307 Switch only, no backlight or fuses



4308 ATO®/ATC® Fuses
4309 Switch only, no backlight or fuses

PN	Pos.	Circuit Breakers	Fuses	Label Backlight	Volts	Width in (mm)	Height in (mm)	Depth in (mm)	Width Mounting Centers in (mm)	Height Mounting Centers in (mm)
4374	4	Yes	--	Yes	12/24V	4.25 (107.95)	4.30 (109.22)	3.50 (88.90)	3.69 (93.73)	3.74 (95.00)
4376	6	Yes	--	Yes	12/24V	4.25 (107.95)	6.00 (152.40)	3.50 (88.90)	3.69 (93.73)	5.44 (138.18)
4378	8	Yes	--	Yes	12/24V	4.25 (107.95)	7.70 (195.58)	3.50 (88.90)	3.69 (93.73)	7.14 (181.36)
4302	2	--	Yes	Yes	12V	3.88 (98.55)	2.60 (66.04)	2.50 (63.50)	3.31 (84.07)	2.04 (51.82)
4304	4	--	Yes	Yes	12V	3.88 (98.55)	4.30 (109.22)	2.50 (63.50)	3.31 (84.07)	3.74 (95.00)
4306	6	--	Yes	Yes	12V	3.88 (98.55)	6.00 (152.40)	2.50 (63.50)	3.31 (84.07)	5.44 (138.18)
4308	8	--	Yes	Yes	12V	3.88 (98.55)	7.70 (195.58)	2.50 (63.50)	3.31 (84.07)	7.14 (181.36)
4303	2	--	--	--	12/24V	3.88 (98.55)	2.60 (66.04)	2.50 (63.50)	3.31 (84.07)	2.04 (51.82)
4305	4	--	--	--	12/24V	3.88 (98.55)	4.30 (109.22)	2.50 (63.50)	3.31 (84.07)	3.74 (95.00)
4307	6	--	--	--	12/24V	3.88 (98.55)	6.00 (152.40)	2.50 (63.50)	3.31 (84.07)	5.44 (138.18)
4309	8	--	--	--	12/24V	3.88 (98.55)	7.70 (195.58)	2.50 (63.50)	3.31 (84.07)	7.14 (181.36)

Contura Switch Water Resistant Panels



Cutwater Boats installs Blue Sea Systems Contura Switch Panels at the helm of their boats including the 30 Sport Top.

Rugged Design For Wet Environments

Using industry standard Contura switches, the Blue Sea Systems Contura Switch Water Resistant Panels are designed to perform above deck, as well as complement any interior. Fuse models are available in a classic grey finish, and circuit breaker models are available in white or black.



Style	Contura Switch Water Resistant	
Model	Circuit Breaker	Fuse
Positions	3, 4, 6, 8	1, 3, 4, 6, 8
Voltage Rating	12 / 24V	
Total Panel Rating	45A (all except 8 position panels)	
On indication	LED in switch	
Label format	Small	Large or Small



Fuse Panel back must be enclosed in a dry environment



Circuit Breaker Panel front is rated IP66 when mounted with gasket in place IP66 – Protected against powerful water jets

Related Products



Water Resistant
Fuse Holder
p. 47



Push Button
Circuit Breaker Boot
p. 61



Push Button
Reset-Only
Circuit Breaker
p. 62



Water Resistant
Contura Switches
p. 78

CABIN
LIGHTS

CABIN LIGHTS

Labels
p. 138

Contura Switch Water Resistant Panels

Designed for open-cockpit and flybridge applications using switches to complement existing controls commonly used on many boats

- Designed for 12 or 24V DC systems
- Watertight mounting gasket
- ON indicating LEDs embedded in all switches
- Includes Small Format Label Set 8217 or 8214* (p. 138)

NOTE: Labels are not backlit

Specifications

Voltage Max. Operating	24V DC
Amperage Operating Current	18 Milliamps each
Switch Rating	20A @ 12V DC 15A @ 24V DC
Circuit Breaker Rating	15A
Fuse Holder Rating	20A Max. (15A fuses included)
Panel Cumulative Rating	45A (all except 8 position panels) 90A (8 position panels)

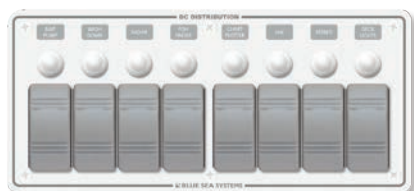
Regulatory

CE marked

CIRCUIT BREAKER MODELS ONLY—Meet UL 1500

and ISO 8846 external ignition protection requirements Panel front is IP66 when mounted with gasket in place—protected against powerful water jets

(see inside back cover)



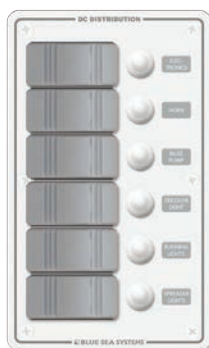
8271



8272



8274



8273

PN	Color	Push Button Circuit Breakers	AGC®/MDL® Fuse Holders	Width in (mm)	Height in (mm)	Depth in (mm)
8274	White	3	--	4.50 (114.30)	3.75 (95.25)	3.25 (82.55)
8272	White	4	--	5.25 (133.35)	4.25 (107.95)	3.25 (82.55)
8273	White	6	--	4.50 (114.30)	7.50 (190.50)	3.25 (82.55)
8271	White	8	--	9.37 (238.00)	4.25 (107.95)	3.25 (82.55)
8374	Black	3	--	4.50 (114.30)	3.75 (95.25)	3.25 (82.55)
8372	Black	4	--	5.25 (133.35)	4.25 (107.95)	3.25 (82.55)
8373	Black	6	--	4.50 (114.30)	7.50 (190.50)	3.25 (82.55)
8371	Black	8	--	9.37 (238.00)	4.25 (107.95)	3.25 (82.55)
8263†	Gray	--	1	2.25 (57.15)	3.75 (95.25)	3.00 (76.20)
8054*	Gray	--	3	5.25 (133.35)	3.75 (95.25)	3.00 (76.20)
8262	Gray	--	4	5.25 (133.35)	3.75 (95.25)	3.00 (76.20)
8053*	Gray	--	6	5.25 (133.35)	7.50 (190.50)	3.00 (76.20)
8261	Gray	--	8	9.37 (238.00)	3.75 (95.25)	3.00 (76.20)

* 8054 and 8053 include Large Format Label Set 8030 (p. 138)

† 8263 Bilge Pump Control Panel—(ON)-OFF-ON Contura Switch (p. 78)



8374



8372



8373



8371



8262



8054*



8261



8053*



8263† / Bilge Pump
Control Panel

Related Product



Dual Bilge Pump
Control Panel
p. 79

360 Panel System



Intrepid uses Blue Sea Systems 360 Panels aboard their boats including the 475 Sport Yacht.

Innovative Design Meets a Wide Range of Flexibility

The 360 Panel System uses an open frame to mount a broad selection of modules allowing multiple functions to be combined in a single panel. This innovative design offers a wide choice of panel features, accommodates future changes, and permits rapid assembly and shipping time. With options ranging from battery management to source selection, the 360 Panel System provides unmatched design flexibility. If you do not find the panel you are looking for in the stock panel offering, please go to pages 116 to find out how to create and order a custom panel that will work for your specific application.

circuit breaker positions:

- stock panels up to 32
- custom panels up to 80

voltage rating:

DC	12V, 24V
AC	120V, 120/240V, 230V

total panel rating: up to 100A per bus

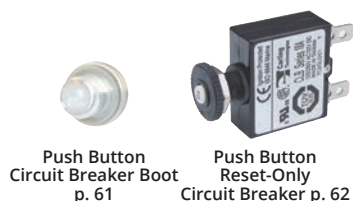
ON indication: LED

labels: square format



Open frame allows future replacement or upgrade of panel modules

Related Products



CABIN LIGHTS

Traditional Metal Panels



Blue Sea Systems' Traditional Metal Panels are a complementary fit on the Sabre Spirit.

Styled to Match Existing Panels

The Traditional Metal Panels are equally suited for use as extensions to existing panels or as full replacements. All panels are pre-wired and include LEDs in all positions. Choose from over 100 stock panels ranging from simple circuit breaker models to complex multi-source AC configurations.

circuit breaker positions:

up to 35

voltage rating:

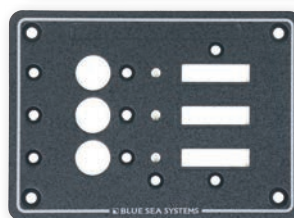
DC	12V, 24V
AC	120V, 120/240V, 230V

total panel rating:

up to 100A per bus

ON indication: LED

labels: square format



Marine grade aluminum frame securely holds fixed panel components and is chemically treated to resist corrosion (aluminum frame not sold separately)

Related Products



DC Branch Circuit Breaker Panels

DC Branch panels distribute current from a high amperage input into lower amperage circuits

Features

- ON-indicating LEDs for select models[†]
- Backlit label positions for select models[†]
- Panels with voltmeters include a toggle switch to monitor voltage on up to three battery banks

Component References

- A-Series Circuit Breakers (p. 68-69)
- Push Button Reset-Only Circuit Breakers (p. 62)
- ON-OFF, SPST Rocker Switches (p. 79)
- 360 Panel System includes 4205 label set (p. 139)
- Traditional Metal panels include 8030 label set (p. 138-139)
- DC Digital Multimeter (p. 126)
- DC Analog Meters (p. 130)
- Amber ON-indicating LEDs (p. 137)



8025



1216

1455[†]1459[†]

8081

Style	Traditional Metal	360 Panel System	360 Panel System	360 Panel System	Traditional Metal
Total Positions	3 Positions	4 Positions	4 Positions	4 Positions	5 Positions
Circuit Breakers	3 A-Series, 15A (7210)	4 A-Series, 15A (7403)	4 Push Button, 10A (7054)	4 Push Button, 10A (7054)	5 A-Series, 15A (7210)
Rocker Switches	--	--	4 ON-OFF, SPST (7480)	4 ON-OFF, SPST (7480)	--
Nominal Voltage	12/24V DC	12V DC	12V DC	12V DC	12V DC
Maximum Amperage	100A	100A	40A	40A	50A
DC Meter	--	--	--	8-16V (8003)	8-16V (8028) , 0-50A (8041)
Width x Height in (mm)	5.25 (133.35) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 7.75 (196.85)	5.25 (133.35) x 7.50 (190.50)
Depth in (mm)	2.50 (63.50)	3.00 (76.20)	3.50 (88.90)	3.50 (88.90)	2.50 (63.50)



8401



8096

1450[†]1457[†]1456[†]

Style	Traditional Metal	Traditional Metal	360 Panel System	360 Panel System	360 Panel System
Total Positions	5 Positions	6 Positions	8 Positions	8 Positions	8 Positions
Circuit Breakers	5 A-Series, 15A (7210)	6 A-Series, 15A (7210)	8 Push Button, 15A (7056)	8 Push Button, 10A (7054)	8 Push Button, 10A (7054)
Rocker Switches	-	-	-	8 ON-OFF, SPST (7480)	8 ON-OFF, SPST (7480)
Nominal Voltage	12/24V DC	12/24V DC	12/24V DC	12V DC	12V DC
Maximum Amperage	100A	100A per bus	90A	80A	80A
DC Meter	Digital Multimeter (8248)	--	--	--	--
Width x Height in (mm)	5.25 (133.35) x 7.50 (190.50)	10.50 (266.70) x 3.75 (95.25)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 7.75 (196.85)	9.25 (234.95) x 4.75 (120.65)
Depth in (mm)	4.00 (101.6)	2.50 (63.50)	3.50 (88.90)	3.50 (88.90)	3.50 (88.90)



1200



1225



8023



8385

1463[†]

Style	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal	360 Panel System
Total Positions	8 Positions	8 Positions	8 Positions	8 Positions	8 Positions
Circuit Breakers	8 A-Series, 15A (7403)	8 A-Series, 15A (7403)	5 A-Series, 15A (7210)	6 A-Series, 15A (7210)	8 Push Button, 10A (7054)
Rocker Switches	--	--	--	--	8 ON-OFF, SPST (7480)
Nominal Voltage	12V DC	12V DC	12/24V DC	12/24V DC	12V DC
Maximum Amperage	100A	100A per bus	100A	100A per bus	80A
Meter (PN)	--	--	--	--	8-16V (8003)
Width x Height in (mm)	4.88 (123.83) x 7.75 (196.85)	9.25 (234.95) x 4.75 (120.65)	5.25 (133.35) x 7.50 (190.50)	10.50 (266.70) x 4.50 (114.30)	4.88 (123.83) x 10.75 (273.05)
Depth in (mm)	3.00 (76.20)	3.00 (76.20)	2.50 (63.50)	2.50 (63.50)	3.50 (88.90)

[†] Without ON-indicating LEDs or backlit label positions



1227



8082



8402

1461[†]1464[†]

Style	360 Panel System	Traditional Metal	Traditional Metal	360 Panel System	360 Panel System
Total Positions	8 Positions	10 Positions	10 Positions	12 Positions	12 Positions
Circuit Breakers	8 A-Series, 15A (7403)	7 A-Series, 15A (7210)	7 A-Series, 15A (7210)	12 Push Button, 10A (7054)	12 Push Button, 10A (7054)
Rocker Switches	--	--	--	12 ON-OFF, SPST (7480)	12 ON-OFF, SPST (7480)
Nominal Voltage	12V DC	12V DC	12/24V DC	12V DC	12V DC
Maximum Amperage	100A	50A	100A	120A	120A
Meter	Digital Multimeter (8248)	8-16V (8028) / 0-50A (8041)	Digital Multimeter (8248)	--	8-16V (8003)
Width X Height in (mm)	4.88 (123.83) x 7.75 (196.85)	5.25 (133.35) x 11.25 (285.75)	5.25 (133.35) x 11.25 (285.75)	4.88 (123.83) x 10.75 (273.05)	9.25 (234.95) x 7.75 (196.85)
Depth in (mm)	3.00 (76.20)	2.50 (63.50)	4.00 (101.6)	3.50 (88.90)	3.50 (88.90)



1223



1217



8375



8376

Style	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Total Positions	12 Positions	12 Positions	12 Positions	13 Positions
Circuit Breakers	12 A-Series, 15A (7403)	12 A-Series, 15A (7403)	10 A-Series, 15A (7210)	10 A-Series, 15A (7210)
Rocker Switches	--	--	--	--
Nominal Voltage	12V DC	12V DC	12/24V DC	12/24V DC
Maximum Amperage	100A	100A per bus	100A per bus	100A
DC Meter	--	Digital Multimeter (8248)	--	--
Width x Height in (mm)	4.88 (123.83) x 10.75 (273.05)	9.25 (234.95) x 7.75 (196.85)	14.75 (374.65) x 4.50 (114.30)	5.25 (133.35) x 11.25 (285.75)
Depth in (mm)	3.00 (76.20)	4.00 (101.60)	2.50 (63.50)	2.50 (63.50)



8068



8403

Style	Traditional Metal	Traditional Metal
Total Positions	13 Positions	13 Positions
Circuit Breakers	10 A-Series, 15A (7210)	10 A-Series, 15A (7210)
Nominal Voltage	12V DC	12/24V DC
Maximum Amperage	50A	100A per bus
DC Meter	8-16V (8028) , 0-50A (8041)	Digital Multimeter (8248)
Width x Height in (mm)	10.50 (266.70) x 7.50 (190.50)	10.50 (266.70) x 7.50 (190.50)
Depth in (mm)	3.00 (76.20)	4.00 (101.6)

[†] Without ON-indicating LEDs or backlit label positions

DC Branch Circuit Breaker Panels

**1222**

Style	360 Panel System
Total Positions	16 Positions
Circuit Breakers	16 A-Series, 15A (7403)
Nominal Voltage	12V DC
Maximum Amperage	100A per bus
DC Meter	--
Width in (mm)	9.25 (234.95)
Height in (mm)	7.75 (196.85)
Depth in (mm)	3.00 (76.20)

**8377**

Style	Traditional Metal
Total Positions	16 Positions
Circuit Breakers	10 A-Series, 15A (7210)
Nominal Voltage	12/24V DC
Maximum Amperage	100A per bus
DC Meter	--
Width in (mm)	10.50 (266.70)
Height in (mm)	7.50 (190.50)
Depth in (mm)	2.50 (63.50)

**1201**

Style	360 Panel System
Total Positions	16 Positions
Circuit Breakers	16 A-Series, 15A (7403)
Nominal Voltage	12V DC
Maximum Amperage	50A
DC Meter	8-16V (8003), 0-50A (8022)
Width in (mm)	13.63 (346.08)
Height in (mm)	7.75 (196.85)
Depth in (mm)	3.00 (76.20)

**8378**

Style	Traditional Metal
Total Positions	18 Positions
Circuit Breakers	15 A-Series, 15A (7210)
Nominal Voltage	12V DC
Maximum Amperage	100A
DC Meter	8-16V (8003) / 0-100A (8017)
Width in (mm)	14.75 (374.65)
Height in (mm)	7.50 (190.50)
Depth in (mm)	2.50 (63.50)

**1221**

Style	360 Panel System
Total Positions	Main + 19 Positions
Circuit Breakers	1 C-Series, 100A (7549) , 19 A-Series, 15A (7403)
Nominal Voltage	12V DC
Maximum Amperage	100A
DC Meter	Digital Multimeter (8248)
Width in (mm)	13.63 (346.08)
Height in (mm)	7.75 (196.85)
Depth in (mm)	4.00 (101.60)

**8379**

Style	Traditional Metal
Total Positions	Main + 20 Positions
Circuit Breakers	1 C-Series, 100A (7250I) , 14 A-Series, 15A (7210)
Nominal Voltage	12/24V DC
Maximum Amperage	100A
DC Meter	Digital Multimeter (8248)
Width in (mm)	14.75 (374.65)
Height in (mm)	7.50 (190.50)
Depth in (mm)	4.00 (101.6)

**8380**

Style	Traditional Metal
Total Positions	Main + 22 Positions
Circuit Breakers	1 C-Series, 100A (7250I) , 16 A-Series, 15A (7210)
Nominal Voltage	12V DC
Maximum Amperage	100A
DC Meter	8-16V (8028) / 0-100A Micro
Width in (mm)	10.50 (266.70)
Height in (mm)	11.25 (285.75)
Depth in (mm)	3.00 (76.20)

**8264**

Style	Traditional Metal
Total Positions	24 Positions
Circuit Breakers	15 A-Series, 15A (7210)
Nominal Voltage	12/24V DC
Maximum Amperage	100A per bus
DC Meter	--
Width in (mm)	14.75 (374.65)
Height in (mm)	7.50 (190.50)
Depth in (mm)	2.50 (63.50)



Style	8381 Traditional Metal	8382 Traditional Metal
Total Positions	Main + 32 Positions	Main + 35 Positions
Circuit Breakers	1 C-Series, 100A (7250I) , 23 A-Series, 15A (7210)	1 C-Series, 100A (7250I) , 26 A-Series, 15A (7210)
Nominal Voltage	12V DC	12/24V DC
Maximum Amperage	100A	100A
DC Meter	8-16V (8003) / 0-100A (8017)	Digital Multimeter (8248)
Width in (mm)	14.75 (374.65)	14.75 (374.65)
Height in (mm)	11.25 (285.75)	11.25 (285.75)
Depth in (mm)	3.00 (76.20)	4.00 (101.6)



SAFE Boats specifies Blue Sea Systems Custom 360 Panels aboard their Defender boats used by military and commercial agencies.



AC Branch Circuit Breaker Panels

AC Branch panels distribute current from a high amperage input into lower amperage circuits.

Features

- On indicating LEDs in all circuit positions
- Backlit label positions

Component References

- A-Series Circuit Breakers (p. 68–69)
- AC Analog Meters (p. 131)
- 360 Panel System includes 4206 label set (p. 139)
- Traditional Metal panels include 8031 label set (p. 138–139)
- Green ON-indicating LEDs (p. 137)



Style	8058	8158	1210	1211	8097	8197
	Traditional Metal		360 Panel System		Traditional Metal	
Total Positions	3 Positions		4 Positions		6 Positions	
Circuit Breakers	3 A-Series, 15A (7210)	3 A-Series, 8A (7299)	4 A-Series, 15A (7403)	4 A-Series, 8A (7401)	6 A-Series, 15A (7210)	6 A-Series, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Maximum Amperage	100A		100A		100A per bus	
Actuator Style	White Toggle		Flat Rocker		White Toggle	
Insulating Back Cover	4026 sold separately (p. 137)		1331 sold separately (p. 136)		--	
Width x Height in (mm)	5.25 (133.35) x 3.75 (95.25)		4.88 (123.83) x 4.75 (120.65)		10.50 (266.70) x 3.75 (95.25)	
Depth in (mm)	2.50 (63.50)		3.00 (76.20)		2.50 (63.50)	



Style	1228	1229	8059	8159
	360 Panel System		Traditional Metal	
Total Positions	8 Positions		8 Positions	
Circuit Breakers	8 A-Series, 15A (7403)	8 A-Series, 8A (7401)	5 A-Series, 15A (7210)	5 A-Series, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC
Maximum Amperage	100A		100A	
Actuator Style	Flat Rocker		White Toggle	
Insulating Back Cover	2 x 1331 sold separately (p. 136)		4027 sold separately (p. 137)	
Width x Height in (mm)	4.88 (123.83) x 7.75 (196.85)		5.25 (133.35) x 7.50 (190.50)	
Depth in (mm)	3.00 (76.20)		2.50 (63.50)	



Style	8411	8511	8478	8578	8480	8580
	Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	8 Positions		10 Positions		13 Positions	
Circuit Breakers	6 A-Series, 15A (7210)	6 A-Series, 8A (7299)	7 A-Series, 15A (7210)	7 A-Series, 8A (7299)	10 A-Series, 15A (7210)	10 A-Series, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Maximum Amperage	100A per bus		100A		100A	
Actuator Style	White Toggle		White Toggle		White Toggle	
Meter (PN)	--		0-150V (9353)	0-250V (9354)	--	
Insulating Back Cover	--		--		--	
Width x Height in (mm)	10.50 (266.70) x 4.50 (114.30)		5.25 (133.35) x 11.25 (285.75)		5.25 (133.35) x 11.25 (285.75)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)	

230 Volt (typical of Europe)



	8479	8579	8461	8561	8265	8165
Style	Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	13 Positions		16 Positions		24 Positions	
Circuit Breakers	10 A-Series, 15A (7210)	10 A-Series, 8A (7299)	10 A-Series, 15A (7210)	10 A-Series, 8A (7299)	15 A-Series, 15A (7210)	15 A-Series, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Maximum Amperage	100A per bus		100A per bus		100A per bus	
AC Meter	0-150V (9353)	0-250V (9354)	---		---	
Actuator Style	White Toggle		White Toggle		White Toggle	
Insulating Back Cover	---		---		---	
Width in (mm)	10.50 (266.70) x 7.50 (190.50)		10.50 (266.70) x 7.50 (190.50)		14.75 (374.64) x 7.50 (190.50)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)	

230 Volt (typical of Europe)



Krogen Express outfits their yachts with Blue Sea Systems electrical including Traditional Metal Panels which complement the lines of the 52 Trawler.

230 Volt (typical of Europe)



AC Main Circuit Breaker Panels

The AC Main power system provides a path for delivering power from the ship's source of AC power to the AC branch distribution system. It begins at the AC power source (shore power, genset, or inverter), and ends at the AC branch circuit. See page 72 for a discussion of ABYC ELCI recommendations for AC Main circuit protection.

Features

- Red reverse polarity indication LED
- Green ON indicating LEDs
- Backlit label positions

Component References

- A-Series Circuit Breakers (p. 68–69)
- AC Analog Meters (p. 131)
- AC Digital Multimeter (p. 127)
- Red reverse polarity indication LED (p. 137)
- Green ON indicating LEDs (p. 137)
- Traditional Metal panels include 8031 label set (p. 138–139)
- 360 Panel System includes 4206 label set (p. 139)
- Source Selection Label Set included with panels 8077, 8177, 8079, and 8179 (p. 139)



	8077 [†]	8177 [†]	8079 [†]	8179 [†]	8029	8129	1214	1215
Style	Traditional Metal		Traditional Metal		Traditional Metal		360 Panel System	
Total Positions	Main Only		Main Only		Main + 1 position		Main + 2 positions	
A-Series Circuit Breakers	Main, 30A (7238)	Main, 16A (7294)	Main, 50A (7242)	Main, 32A (7295)	Main, 30A (7238)	Main, 16A (7294)	Main, 30A (7414) 2 Branch, 15A (7403)	Main, 16A (7412) 2 Branch, 8A (7401)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	White Toggle		White Toggle		White Toggle		Flat Rocker	
Insulating Back Cover	---		---		4026 sold separately (p. 137)		1331 sold separately (p. 136)	
Width x Height in (mm)	2.63 (66.80) x 3.75 (95.25)		2.63 (66.80) x 3.75 (95.25)		5.25 (133.35) x 3.75 (95.25)		4.88 (123.83) x 4.75 (120.65)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)		3.00 (76.20)	



	1206	1207	8043	8143	8409	8509	8405	8505
Style	360 Panel System		Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	Main + 2 positions		Main + 3 positions		Main + 3 positions		Main + 3 positions	
A-Series Circuit Breakers	Main, 30A (7414) 2 Branch, 15A (7403)	Main, 16A (7412) 2 Branch, 8A (7401)	Main, 30A (7238) 3 Branch, 15A (7210)	Main, 16A (7294) 3 Branch, 8A (7299)	Main, 30A (7238) 3 Branch, 15A (7210)	Main, 16A (7294) 3 Branch, 8A (7299)	Main, 30A (7238) 3 Branch, 15A (7210)	Main, 16A (7294) 3 Branch, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	Flat Rocker		White Toggle		White Toggle		White Toggle	
AC Meter	0–150V (9353)	0–250V (8245)	0–150V (9353)	0–250V (8245)	0–150V (8244) 0–50A (8246)	0–250V (8245) 0–50A (8246)	Digital Multimeter (8247)	
Insulating Back Cover	2 x 1331 sold separately (p. 136)		4027 sold separately (p. 137)		4027 sold separately (p. 137)		4027 sold separately (p. 137)	
Width x Height in (mm)	4.88 (123.83) x 7.75 (196.85)		5.25 (133.35) x 7.50 (190.50)		5.25 (133.35) x 7.50 (190.50)		5.25 (133.35) x 7.50 (190.50)	
Depth in (mm)	3.00 (76.20)		2.50 (63.50)		3.00 (76.20)		4.00 (101.60)	



	8099	8199	8027	8127	8412	8512	1230	1233
Style	Traditional Metal		Traditional Metal		Traditional Metal		360 Panel System	
Total Positions	Main + 4 positions		Main + 6 positions		Main + 6 positions		Main + 6 positions	
A-Series Circuit Breakers	Main, 30A (7238) 4 Branch, 15A (7210)	Main, 16A (7294) 4 Branch, 8A (7299)	Main, 30A (7238) 3 Branch, 15A (7210)	Main, 16A (7294) 3 Branch, 8A (7299)	Main, 30A (7238) 4 Branch, 15A (7210)	Main, 16A (7294) 4 Branch, 8A (7299)	Main, 30A (7414) 6 Branch, 15A (7403)	Main, 16A (7412) 6 Branch, 8A (7401)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	White Toggle		White Toggle		White Toggle		Flat Rocker	
Insulating Back Cover	-		4027 sold separately (p. 137)		---		2 x 1331 sold separately (p. 136)	
Width x Height in (mm)	10.50 (266.70) x 3.75 (95.25)		5.25 (133.35) x 7.50 (190.50)		10.50 (266.70) x 4.50 (114.30)		9.25 (234.95) x 4.75 (120.65)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)		2.50 (63.50)		3.00 (76.20)	

[†] Panels without backlit labels

230 Volt (typical of Europe)



	1202	1203	8074	8174	8488	8588	8406	8506
Style	360 Panel System		Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	Main + 6 positions		Main + 8 positions		Main + 8 positions		Main + 8 positions	
A-Series Circuit Breakers	Main, 30A (7414) 6 Branch, 15A (7403)	Main, 16A (7412) 6 Branch, 8A (7401)	Main, 30A (7238) 5 Branch, 15A (7210)	Main, 16A (7294) 5 Branch, 8A (7299)	Main, 30A (7238) 5 Branch, 15A (7210)	Main, 16A (7294) 5 Branch, 8A (7299)	Main, 30A (7238) 5 Branch, 15A (7210)	Main, 16A (7294) 5 Branch, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	Flat Rocker		White Toggle		White Toggle		White Toggle	
AC Meter	---		0-150V (8244) 0-50A (8246)	0-250V (8245) 0-50A (8246)	0-150V (9353)	0-250V (9354)	Digital Multimeter (8247)	
Insulating Back Cover	2 x 1331 sold separately (p. 136)		---		---		---	
Width x Height in (mm)	4.88 (123.83) x 7.75 (196.85)		5.25 (133.35) x 11.25 (285.75)		5.25 (133.35) x 11.25 (285.75)		5.25 (133.35) x 11.25 (285.75)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)		2.50 (63.50)		4.00 (101.60)	



	8485	8585	8076	8176	8407	8507
Style	Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	Main + 11 positions		Main + 11 positions		Main + 11 positions	
A-Series Circuit Breakers	Main, 30A (7238) 8 Branch, 15A (7210)	Main, 16A (7294) 8 Branch, 8A (7299)	Main, 30A (7238) 8 Branch, 15A (7210)	Main, 16A (7294) 8 Branch, 8A (7299)	Main, 30A (7238) 8 Branch, 15A (7210)	Main, 16A (7294) 8 Branch, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	White Toggle		White Toggle		White Toggle	
AC Meter	---		0-150V (8244) 0-50A (8246)	0-250V (8245) 0-50A (8246)	Digital Multimeter (8247)	
Insulating Back Cover	---		---		---	
Width x Height in (mm)	5.25 (133.35) x 11.25 (285.75)		10.50 (266.70) x 7.50 (190.50)		10.50 (266.70) x 7.50 (190.50)	
Depth in (mm)	2.50 (63.50)		3.00 (76.20)		4.00 (101.60)	



	8464	8564	8465	8565
Style	Traditional Metal		Traditional Metal	
Total Positions	Main + 14 positions		Main + 22 positions	
A-Series Circuit Breakers	Main, 30A (7238) 8 Branch, 15A (7210)	Main, 16A (7294) 8 Branch, 8A (7299)	Main, 30A (7238) 13 Branch, 15A (7210)	Main, 16A (7294) 13 Branch, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC
Actuator Style	White Toggle		White Toggle	
Insulating Back Cover	---		---	
Width x Height in (mm)	10.50 (266.70) x 7.50 (190.50)		14.75 (374.65) x 7.50 (190.50)	
Depth in (mm)	2.50 (63.50)		2.50 (63.50)	

AC Residual Current Circuit Breaker Panels

GFCI Branch and ELCI Main

Reduces the risk of fire and shock hazards caused by defects in boat appliances and circuit wiring.

See page 72 for a review of new ABYC ELCI recommendations for AC Main circuit protection.

Features

- Provides Main circuit protection with branch circuits

Component References

- GFCI Branch and ELCI Main Circuit Breakers (p. 73)
- A-Series Circuit Breakers (p. 68-69)
- Analog Meters (p. 313)



1502



8100



1190



8101

Style	360 Panel System	Traditional Metal	360 Panel System	Traditional Metal
Total Positions	ELCI + 1 Position	ELCI	ELCI + 1 position	ELCI + 5 positions
GFCI/ELCI Circuit Breaker	1 - ELCI Main, 30A (3102)	1 - ELCI Main, 30A (3106)	1 - ELCI Main, 30A (3102)	1 - ELCI Main, 30A (3106)
A-Series Circuit Breaker	--	--	1 - Branch, 15A AC (7403)	2 - Branch, 15A (7210)
Amperage Trip Reference	30A	30A	30A	30A
Leakage Trip Amperage	30mA	30mA	30mA	30mA
Maximum Voltage	120V	120V	120V	120V
Actuator Style	Flat Rocker	White Toggle	Flat Rocker	White Toggle
Insulating Panel Back	1331 sold separately (p. 136)	--	1331 sold separately (p. 136)	--
Width x Height in (mm)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 7.50 (190.50)
Depth in (mm)	3.99 (101.4)	3.50 (88.90)	3.99 (101.4)	3.50 (88.90)

AC 120/240 Volt (60Hz) Circuit Breaker Panels

Provides circuit protection for boats with 240 Volt AC systems

- 1168 Provides 1 spare rocker aperture

Component References



8102



1193

Style	Traditional Metal	360 Panel System
Total Positions	ELCI + 2 positions	ELCI + 5 positions
ELCI Circuit Breaker	1 - ELCI Main, 30A AC (3106)	1 - ELCI Main, 30A AC (3102)
A-Series Circuit Breaker	2 - Branch, 15A AC (7210)	4 - Branch, 15A AC (7403)
Amperage Trip Reference	30A AC	30A AC
Leakage Trip Amperage	30mA	30mA
Maximum Voltage	120V AC	120V AC
Actuator Style	White Toggle	Flat Rocker
Insulating Panel Back	-	2 x 1331 sold separately (p. 136)
AC Meter	0-150V (9353)	-
Width x Height in (mm)	5.25 (133.35) x 7.50 (190.50)	9.25 (234.95) x 4.75 (120.65)
Depth in (mm)	3.50 (88.9)	3.99 (101.4)



7372



1168

Style	Traditional Metal	360 Panel System
Total Positions	Main Only	Main + 1 position
C-Series Circuit Breaker	1 Main, 50A (7287)	1 Main, 50A (7565)
Poles	3	3
Nominal Voltage	120/240V	120/240V
Maximum Voltage	240V AC	240V AC
Actuator Style	White Toggle	Flat Rocker
Width in (mm)	5.25 (133.35)	4.88 (123.83)
Height in (mm)	3.75 (95.25)	4.75 (120.65)
Depth in (mm)	3.00 (76.20)	3.00 (76.20)

AC Source Selection Circuit Breaker Panels

AC Source Selection panels allow the boater to select between two or three AC sources to supply power to the AC Branch distribution system

Features

- Lockout slides ensure that no two sources of AC power are connected to the circuit simultaneously
- Backlit label positions

Component References

- A-Series Circuit Breakers (p. 68–69)
- AC Analog Meters (p. 131)
- AC Digital Multimeter (p. 126)
- Red reverse polarity indication LED (p. 137)
- Green ON indicating LEDs (p. 137)
- Traditional Metal panels with Branch circuit breakers include 8031 label set (p. 138–139)
- 360 Panel System panels with Branch circuit breakers include 4206 label set (p. 139)
- All Panels include a Reverse Polarity label and a Source Selection label set (p. 139)



	1208	1209	1231	1232	8032	8132	8061	8161
Style	360 Panel System		360 Panel System		Traditional Metal		Traditional Metal	
Total Positions	2 Sources		2 Sources		2 Sources		2 Sources	
A-Series Circuit Breakers	2 Main, 30A (7574)	2 Main, 16A (7572)	2 Main, 50A (7577)	2 Main, 32A (7575)	2 Main, 30A (7238)	2 Main, 16A (7294)	2 Main, 50A (7242)	2 Main, 32A (7295)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	Raised Rocker		Raised Rocker		White Toggle		White Toggle	
Insulating Back Cover	1331 sold separately (p. 136)		1331 sold separately (p. 136)		4026 sold separately (p. 137)		4026 sold separately (p. 137)	
Width x Height in (mm)	4.88 (123.83) x 4.75 (120.65)		4.88 (123.83) x 4.75 (120.65)		5.25 (133.35) x 3.00 (76.20)		5.25 (133.35) x 3.00 (76.20)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	



	8498	8598	8499	8599	8467	8567
Style	Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	3 Sources + Transfer		2 Sources + 4 positions		2 Sources + 4 positions	
A-Series Circuit Breakers (PN)	2 Main, 30A (7238) 1 Main, 50A (7242) 1 Transfer, 30A (7238)	2 Main, 16A (7294) 1 Main, 32A (7295) 1 Transfer, 16A (7294)	2 Main, 30A (7238) 2 Branch, 15A (7210)	2 Main, 16A (7294) 2 Branch, 8A (7299)	2 Main, 30A (7238) 2 Branch, 15A (7210)	2 Main, 16A (7294) 2 Branch, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	White Toggle		White Toggle		White Toggle	
Insulating Back Cover	--		--		4027 sold separately (p. 137)	
Width x Height in (mm)	10.50 (266.70) x 4.50 (114.30)		10.50 (266.70) x 4.50 (114.30)		5.25 (133.35) x 7.50 (190.50)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	



	8489	8589	8462	8562	8466	8566
Style	Traditional Metal		Traditional Metal		Traditional Metal	
Total Positions	2 Sources + 6 positions		2 Sources + 9 positions		2 Sources + 9 positions	
A-Series Circuit Breakers	2 Main, 30A (7238) 3 Branch, 15A (7210)	2 Main, 16A (7294) 3 Branch, 8A (7299)	2 Main, 30A (7238) 6 Branch, 15A (7210)	2 Main, 16A (7294) 6 Branch, 8A (7299)	2 Main, 30A (7238) 6 Branch, 15A (7210)	2 Main, 16A (7294) 6 Branch, 8A (7299)
Nominal Voltage	120V AC	230V AC	120V AC	230V AC	120V AC	230V AC
Actuator Style	White Toggle		White Toggle		White Toggle	
Meter	0–150V (9353)	0–250V (9354)	0–150V (9353)	0–250V (9354)	--	
Insulating Back Cover	--		--		--	
Width x Height in (mm)	5.25 (133.35) x 11.25 (285.75)		10.50 (266.70) x 7.50 (190.50)		5.25 (133.35) x 11.25 (285.75)	
Depth in (mm)	3.00 (76.20)		3.00 (76.20)		3.00 (76.20)	

230 Volt (typical of Europe)

AC Source Selection Rotary Switch Panels

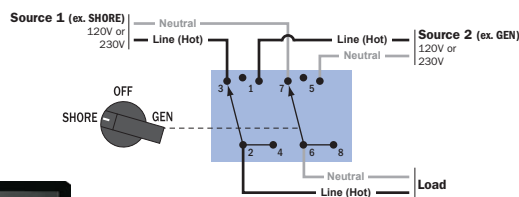
Heavy duty industrial rated switches provide a compact and intuitive solution for safely managing AC sources when circuit protection is provided elsewhere. Panels include ON and Red REVERSE POLARITY indicating LEDs and Source Selection Label Set (label list shown on page 139). 360 Panel System panels include backlit label positions.

30 Amp 2 Positions + OFF, 2 Pole Rotary Switch

- Switches 2 sources
- Allows connecting one of two different AC sources to one circuit

PN 9009

Regulatory

CE marked
UL listed

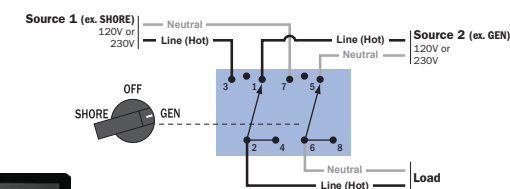
	9009	1481	1484	8367	8359
Style	Rotary Switch	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Voltage Max. Operating	600V AC	120V AC	230V AC	120V AC	230V AC
Wire Size Range	14-10 AWG	14-10 AWG	14-10 AWG	14-10 AWG	14-10 AWG
Insulating Panel Back	-	1331 sold separately (p. 136)	1331 sold separately (p. 136)	4026 sold separately (p. 137)	4026 sold separately (p. 137)
Width x Height in (mm)	1.89 (48.00) x 1.89 (48.00)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	1.91 (48.51)	1.91 (48.51)	1.91 (48.51)	1.91 (48.51)	1.91 (48.51)

65 Amp 2 Positions + OFF, 2 Pole Rotary Switch

- Switches 2 sources
- Allows connecting one of two different AC sources to one circuit

PN 9011

Regulatory

CE marked
UL listed

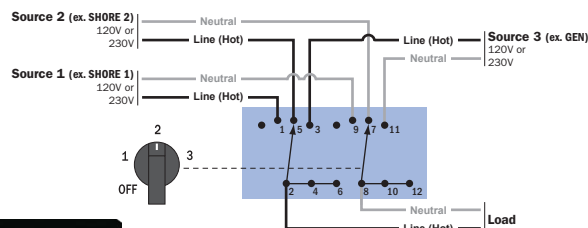
	9011	1483	1486	8365	8357
Style	Rotary Switch	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Voltage Max. Operating	600V AC	120V AC	230V AC	120V AC	230V AC
Wire Size Range	12-6 AWG	12-6 AWG	12-6 AWG	12-6 AWG	12-6 AWG
Insulating Panel Back	-	1331 sold separately (p. 136)	1331 sold separately (p. 136)	4026 sold separately (p. 137)	4026 sold separately (p. 137)
Width x Height in (mm)	2.52 (64.00) x 2.52 (64.00)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)

30 Amp 3 Positions + OFF, 2 Pole Rotary Switch

- Switches 3 sources
- Allows connecting one of three different AC sources to one circuit

PN 9010

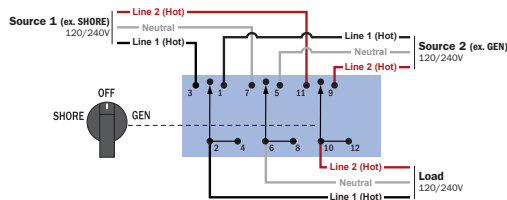
Regulatory

CE marked
UL listed

	9010	1482	1485	8366	8358
Style	Rotary Switch	360 Panel System	360 Panel System	Traditional Metal	Traditional Metal
Voltage Max. Operating	600V AC	120V AC	230V AC	120V AC	230V AC
Wire Size Range	14-10 AWG	14-10 AWG	14-10 AWG	14-10 AWG	14-10 AWG
Insulating Panel Back	-	1331 sold separately (p. 136)	1331 sold separately (p. 136)	4026 sold separately (p. 137)	4026 sold separately (p. 137)
Width x Height in (mm)	1.89 (48.00) x 1.89 (48.00)	4.88 (123.83) x 4.75 (120.65)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)	2.41 (61.21)

65 Amp 2 Positions + OFF, 3 Pole Rotary Switch

- Switches 2-120/240 Volt AC sources
- Switches both lines (hots) and neutral
- Allows connecting one of two different AC sources to one circuit



PN 9019

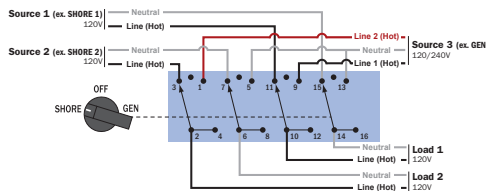
Regulatory
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UL listed



Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Max. Operating	600V AC	240V AC	240V AC
Wire Size Range	12-6 AWG	12-6 AWG	12-6 AWG
Insulating Panel Back	---	---	---
Width x Height in (mm)	2.52 (64.00) x 2.52 (64.00)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	3.65 (92.71)	3.65 (92.71)	3.65 (92.71)

30 Amp 2 Positions + OFF, 4 Pole Rotary Switch

- Switches between 2-120 Volt AC shore power sources and 1-120/240 Volt AC source to 2-120 Volt AC load groups
- Switches both lines (hots) and neutral



PN 6337

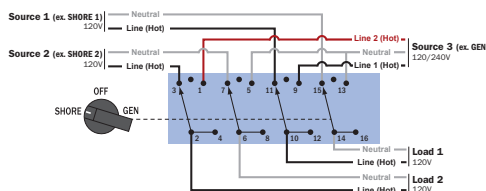
Regulatory
CE marked
UL listed



Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Max. Operating	600V AC	240V AC	240V AC
Wire Size Range	14-10 AWG	14-10 AWG	14-10 AWG
Insulating Panel Back	-	1331 sold separately (p. 136)	-
Width x Height in (mm)	1.89 (48.00) x 1.89 (48.00)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	2.98 (75.69)	2.98 (75.69)	2.98 (75.69)

65 Amp 2 Positions + OFF, 4 Pole Rotary Switch

- Switches between 2-120 Volt AC shore power sources and 1-120/240 Volt AC source to 2-120 Volt AC load groups
- Switches both lines (hots) and neutral



PN 9093

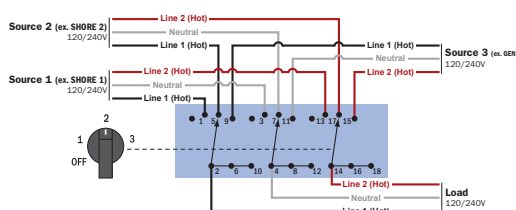
Regulatory
CE marked
UL listed



Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Max. Operating	600V AC	240V AC	240V AC
Wire Size Range	12-6 AWG	12-6 AWG	12-6 AWG
Insulating Panel Back	---	---	---
Width x Height in (mm)	2.52 (64.00) x 2.52 (64.00)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	4.50 (114.30)	4.50 (114.30)	4.50 (114.30)

65 Amp 3 Positions + OFF, 3 Pole Rotary Switch

- Switches 3-120/240 Volt AC sources
- Switches both lines (hot) and neutral
- Allows connecting one of three different AC sources to one circuit



PN 9077

Regulatory
CE marked
UL listed



Style	Rotary Switch	360 Panel System	Traditional Metal
Voltage Max. Operating	600V AC	240V AC	240V AC
Wire Size Range	12-6 AWG	12-6 AWG	12-6 AWG
Insulating Panel Back	---	---	---
Width x Height in (mm)	2.52 (64.0) x 2.52 (64.0)	4.88 (123.83) x 4.75 (120.65)	5.25 (133.35) x 3.75 (95.25)
Depth in (mm)	5.50 (139.70)	5.50 (139.70)	5.50 (139.70)

AC/DC Combination Circuit Breaker Panels

Combines AC and DC switching, circuit protection, source selection and monitoring into a single panel

Features

- ON indicating LEDs installed in all circuit positions
- Backlit label positions
- Includes toggle switch to monitor voltage on up to three batteries
- Circuit identification label sets included
- Insulating covers are included with 360 Panel System AC/DC panels

Component References

- A-Series Circuit Breakers (p. 68–69)
- C-Series Circuit Breakers (p. 70–71)
- DC and AC Analog Meters (p. 130–131)
- DC and AC Digital Multimeters (p. 126–127)
- 360 Panel System AC Insulating Rear Covers (p. 136)
- Traditional Metal Panel AC insulating Rear Covers (p. 137)
- Traditional Metal panels include 8031 and 8030 label set (p. 138–139)
- 360 Panel System panels include 4206 and 4205 label set (p. 139)



	8084	8184	8095	8195
Style	Traditional Metal		Traditional Metal	
Total AC Positions	Main + 6 positions		Main + 8 positions	
Total DC Positions	Main + 15 positions		Main + 29 positions	
AC Circuit Breakers	Main, 30A (7238) 3 Branch, 15A (7210)		Main, 30A (7238) 5 Branch, 15A (7210)	
DC Circuit Breakers	Main, 100A (7250I) 9 Branch, 15A (7210)		Main, 100A DC (7250I) 20 Branch, 15A DC (7210)	
AC/DC Voltage	120V AC/12V DC		120V AC/12V DC	
Insulating Panel Back	4029 sold separately (p. 137)		-	
Actuator Style	White Toggle		White Toggle	
AC Meters	0–150V AC (9353)		0–150V AC (9353), 0–50A AC (9630)	
DC Meters	8–16V DC (8003), 0–100A DC (8017)		0–250V AC (9354), 0–50A AC (9630)	
Width x Height in (mm)	14.75 (374.65) x 10.00 (254.00)		8–16V DC (8003), 0–100A DC (8017)	
Depth in (mm)	3.00 (76.20)		19.50 (495.30) x 11.50 (292.10)	
			3.00 (76.20)	



	1218	1219
Style	360 Panel System	
Total AC Positions	Main + 6 positions	
Total DC Positions	Main + 19 positions	
AC Circuit Breakers	Main, 30A (7414) 6 Branch, 15A (7403)	Main, 16A (7412) 6 Branch, 8A (7401)
DC Circuit Breakers	Main, 100A (7549) 19 Branch, 15A (7403)	Main, 100A (7549) 19 Branch, 15A (7403)
AC/DC Voltage	120V AC/12V DC	230V AC/12V DC
Insulating Panel Back	Included with panel (p. 136)	
Actuator Style	Flat Rocker	
AC Meter	Digital Multimeter (8247)	
DC Meter	Digital Multimeter (8248)	
Width x Height in (mm)	13.63 (346.08) x 10.75 (273.05)	
Depth in (mm)	4.00 (101.60)	

230 Volt (typical of Europe)



	8408	8508	8086	8186
Style	Traditional Metal		Traditional Metal	
Total AC Positions	Main + 6 positions		3 Sources + 12 positions + Transfer	
Total DC Positions	Main + 18 positions		Main + 19 positions	
AC Circuit Breakers	Main, 30A (7238) 3 Branch, 15A (7210)	Main, 16A (7294) 3 Branch, 8A (7299)	2 Main, 30A (7238) 1 Main, 50A (7242) 1 Transfer, 30A (7238) 6 Branch, 15A (7210)	2 Main, 16A (7294) 1 Main, 32A (7295) 1 Transfer, 16A (7294) 6 Branch, 8A (7299)
DC Circuit Breakers	Main, 100A (7250I) 12 Branch, 15A (7210)	Main, 100A (7250I) 12 Branch, 15A (7210)	Main, 100A (7250I) 13 Branch, 15A (7210)	
AC/DC Voltage	120V AC/12/24V DC	230V AC/12/24V DC	120V AC/12V DC	230V AC/12V DC
Insulating Panel Back			4031 sold separately (p. 137)	
Actuator Style	White Toggle		White Toggle	
AC Meters	Digital Multimeter (8247)		0-150V (9353), 0-50A (9630)	0-250V (9354), 0-50A (9630)
DC Meters	Digital Multimeter (8248)		8-16V (8003), 0-100A (8017)	
Width x Height in (mm)	15.75 (400.05) x 10.00 (254.00)		19.50 (495.30) x 11.50 (292.10)	
Depth in (mm)	4.00 (101.60)		3.00 (76.20)	



Vicem Yachts builds the Windsor Craft 38 Hardtop and specifies Blue Sea Systems products, including Traditional Metal Panels, to control power distribution at the helm.

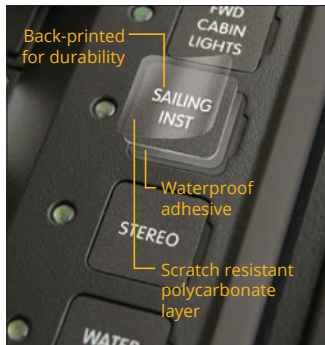
Design and Order a Custom Panel in Three Easy Steps

Design and order custom panels online

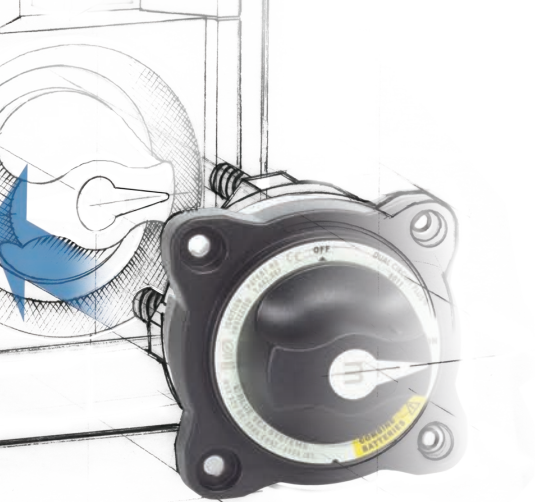
A Custom 360 Panel can be created in a fraction of the time required by other custom panel shops.

The 360 Panel System uses an open frame to mount a broad selection of modules, allowing multiple functions to be combined in a single panel. This innovative design offers a wide choice of AC and DC panel features, can accommodate future changes, and permits rapid assembly. With options ranging from battery management to source selection, the 360 Panel System provides a wide range of design flexibility.





Blue Sea Systems labels are made using a scratch resistant polycarbonate material and are back-printed for durability. Custom Labels for the 360 Panel System can be ordered in any language and are available directly from Blue Sea Systems along with over 500 standard or square format labels.



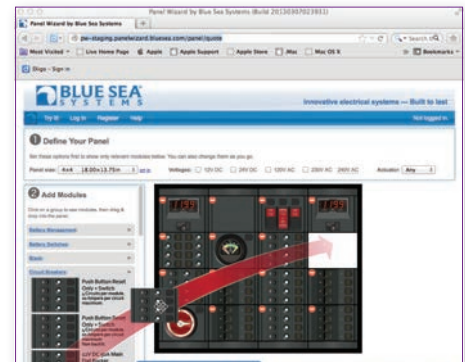
1

Launch
the Panel Wizard at
panelwizard.blueseasystems.com.



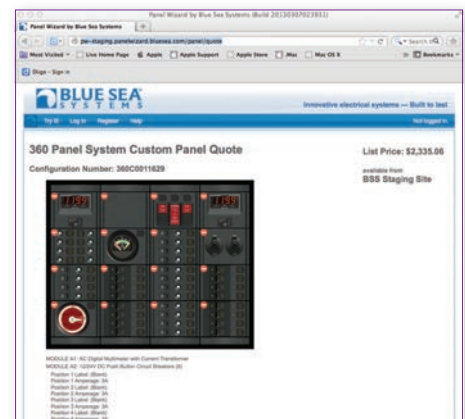
2

Design
the panel with modules,
circuit breakers, and
labels. The list price
is updated with
each change.



3

Confirm
the panel design
and submit an order.
Panels ship within
seven business days
of order receipt.



Completed 3 × 3 Panel



Custom 360 Panel System

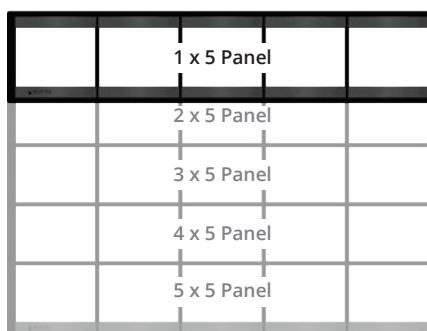
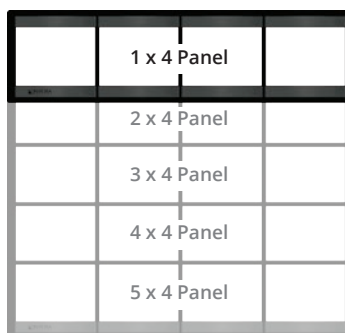
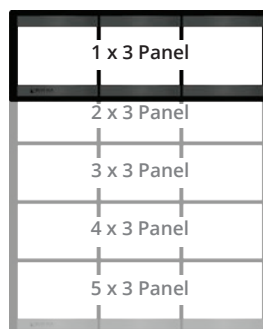
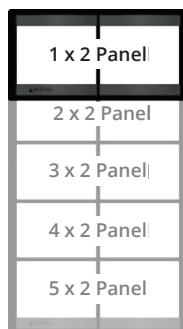
Flexible frame and module configurations

Blue Sea Systems can build all panel sizes from a single module to a 25 module panel with 100 circuit breakers. Panels are assembled and ship from Bellingham, Washington within seven days of order receipt.

Completed 2 × 2 Panel



Rows x Columns	Height in (mm)	Width in (mm)	Cut out Height in (mm)	Cut out Width in (mm)
1 x 1	4.75 (120.65)	4.88 (123.83)	3.31 (84.07)	4.38 (111.13)
2 x 1	7.75 (196.85)	4.88 (123.83)	6.31 (160.27)	4.38 (111.13)
3 x 1	10.75 (273.05)	4.88 (123.83)	9.31 (236.47)	4.38 (111.13)
4 x 1	13.75 (349.25)	4.88 (123.83)	12.31 (312.67)	4.38 (111.13)
5 x 1	16.75 (425.45)	4.88 (123.83)	15.31 (388.87)	4.38 (111.13)
1 x 2	4.75 (120.65)	9.25 (234.95)	3.31 (84.07)	8.75 (222.25)
2 x 2	7.75 (196.85)	9.25 (234.95)	6.31 (160.27)	8.75 (222.25)
3 x 2	10.75 (273.05)	9.25 (234.95)	9.31 (236.47)	8.75 (222.25)
4 x 2	13.75 (349.25)	9.25 (234.95)	12.31 (312.67)	8.75 (222.25)
5 x 2	16.75 (425.45)	9.25 (234.95)	15.31 (388.87)	8.75 (222.25)
1 x 3	4.75 (120.65)	13.63 (346.08)	3.31 (84.07)	13.13 (333.38)
2 x 3	7.75 (196.85)	13.63 (346.08)	6.31 (160.27)	13.13 (333.38)
3 x 3	10.75 (273.05)	13.63 (346.08)	9.31 (236.47)	13.13 (333.38)
4 x 3	13.75 (349.25)	13.63 (346.08)	12.31 (312.67)	13.13 (333.38)
5 x 3	16.75 (425.45)	13.63 (346.08)	15.31 (388.87)	13.13 (333.38)
1 x 4	4.75 (120.65)	18.00 (457.20)	3.31 (84.07)	17.50 (444.50)
2 x 4	7.75 (196.85)	18.00 (457.20)	6.31 (160.27)	17.50 (444.50)
3 x 4	10.75 (273.05)	18.00 (457.20)	9.31 (236.47)	17.50 (444.50)
4 x 4	13.75 (349.25)	18.00 (457.20)	12.31 (312.67)	17.50 (444.50)
5 x 4	16.75 (425.45)	18.00 (457.20)	15.31 (388.87)	17.50 (444.50)
1 x 5	4.75 (120.65)	22.38 (568.33)	3.31 (84.07)	21.88 (555.63)
2 x 5	7.75 (196.85)	22.38 (568.33)	6.31 (160.27)	21.88 (555.63)
3 x 5	10.75 (273.05)	22.38 (568.33)	9.31 (236.47)	21.88 (555.63)
4 x 5	13.75 (349.25)	22.38 (568.33)	12.31 (312.67)	21.88 (555.63)
5 x 5	16.75 (425.45)	22.38 (568.33)	15.31 (388.87)	21.88 (555.63)



M Series Battery Switch p. 18-19



M ACR Automatic Charging Relay p. 34



M LVD Low Voltage Disconnect p. 28



Battery Management p. 79



Battery Management Blank p. 79



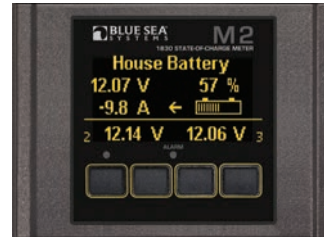
20005

You Can Do It Guide, Design and Order a Custom 360 Panel (20 guides per pack)

See page 145 for other You Can Do It Guides and marketing materials

Visit panelwizard.blueseasystems.com to design and order your custom panel online


DC Flat Rocker Circuit Breakers
p. 69, 71

AC Flat Rocker Circuit Breakers
p. 69, 71


M2 Meter p. 124-125



12V Socket, Dual USB Charger p. 14-15



COTS Circuit Breaker p. 67


Rotary Switch Source Selection
p. 112, 113

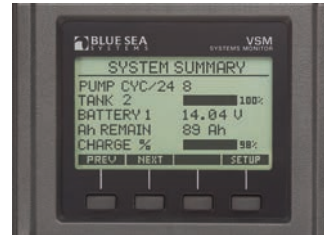

Digital Meter p. 126-127



12V Sockets p. 15


Push Button Circuit Breakers
with Rocker Switches p. 62, 79


Residual Current Circuit Breaker p. 73



Vessel Systems Monitor p. 129



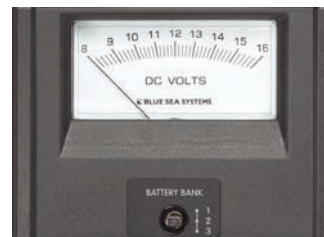
120V AC Dual Outlet p. 136



Push Button Circuit Breakers p. 62



European RCBO Mount



Analog Meter p. 130-131


285 Series or Klixon
Circuit Breakers p. 63-65


Bilge Pump p. 79


Medium Duty Push Button
Circuit Breakers p. 62


DIN Meter p. 130-131


P12 Battery Charger Remote
Display p. 11


2 Inch Gauge p. 133



Blank p. 136

Custom 360 Panel System

Original equipment aboard the world's finest boats and specialty vehicles

Blue Sea Systems Custom 360 Panels are installed as original equipment aboard recreational and commercial boats, emergency response vehicles, and commercial applications.



Sabre Yachts installs Custom 360 Panels at the helm of their Maine-built boats, including the flagship 54 Flybridge Sedan.



EarthRoamer builds vehicles which can go beyond where the road ends. They rely on Blue Sea Systems electrical products, including the Custom 360 Panel, to keep their critical systems functioning.



Moose Boats builds rugged aluminum boats for government and recreational use and specifies 360 Panels as original equipment.





C & C Yachts builds high performance sailboats and uses Custom 360 Panels to manage and monitor the AC and DC Power Distribution aboard the Redline 41.



Defiance Marine manufactures aluminum boats built to withstand the harsh marine environment and they install a full selection of Blue Sea Systems products, including Custom 360 Panels.



Robertson and Caine of South Africa uses Blue Sea Systems Custom 360 Panels as original equipment on their versatile catamarans, including the Leopard 48, used in charter fleets around the world.

METERS

Electrical Monitors and Meters

Knowing the state of the electrical system is critical to the safe operation of a vessel. There are several ways to measure the state of an electrical system using a basic analog meter to the more contemporary OLED Digital Monitor. Monitoring an electrical system can be broken down into two categories:

1. DC Monitoring

Direct Current is typically derived from batteries, but can also be produced by converting AC Current to DC Current using a battery charger. DC values are typically measured in Volts, Amps and Amp-Hours (State-of-Charge or SoC).

Amp-Hours (SoC)

One of the top reasons for a vessel being disabled and requiring assistance is a dead battery. For this reason the State-of-Charge of the battery expressed in Amp-Hours is arguably the most important electrical measurement made on a vessel. To learn more, see the Tech Tip on page 124

Volts

Voltage is useful to understand the behavior of devices whose functionality is dependent on voltage, such as an inverter which may cut off at 10.5 Volts. For smaller boats which spend time in storage, voltage is a good indicator of SoC before leaving. On larger boats, even with SoC monitors, voltage is a good SoC indicator for the starting battery. DC voltage can also indicate if charging or discharging is active. A voltage jump after starting the engine indicates the alternator is working, even if the battery is well charged and takes little current.

Amps

Amperage measurement can be used in two ways:

- 1) The net amperage flow to and from the battery can be monitored to determine how hard the battery is being worked.
- 2) A specific device's amperage flow to (a load such as a pump) or from a power source (such as an alternator) can be measured to determine the device's contribution of the net current flow to or from the battery.

2. AC Monitoring

Alternating Current, known more typically as household current, can also be produced by converting DC current to AC current through the use of an inverter. Typically the values measured are Volts, Amps, Watts, and Frequency.

Volts

Most AC loads work well in a specific range of input voltage. Voltage deviations are symptoms of problems needing attention such as: a failing shore cord connection, inadequate dock power, or faults in a genset or inverter.

Amps

AC current gives an indicator of how much load is operating. There can be a problem with overloading shore cords. Using an ammeter is ideal to measure and choose which loads to have on at the same time and may indicate the potential to trip a circuit breaker.

Watts

Watts is a measure of power, or voltage multiplied by amperage. Most devices that may become overloaded do so because of Amps. Gensets have a kilowatt (kW) and an amp rating. It is rare for a genset to be overloaded in Watts and not be overloaded in Amps. Shorepower and inverter outputs will be sufficiently measured by Amps without referencing Watts. The power (watt) measurement is useful for comparing usage to the rated capacity of a genset or Inverter.

Frequency

Frequency is required for installations with gensets or inverters to determine if they are working correctly. Cruisers may occasionally venture into locations where the shore line frequency is different, or where it is locally generated and can deviate from nominal. This can be the case in the Caribbean or on the west coast of Canada or Alaska in small communities.



METERS



M2 OLED Digital | 124-125, 132

Digital | 126-127, 132

Mini OLED DC Voltmeter | 128, 132

Mini Clamp Multimeter | 128, 132

Vessel Systems Monitor | 129, 132

Analog | 130-131, 132

2 Inch Round Gauges | 133

DC Shunts | 133

AC Transformers | 133

SAFE Boats specifies Blue Sea Systems **Digital Meters in the Custom 360 Panels** aboard their imposing security vessels, including the Defender 38 used by Coast Guards around the world.

M2 OLED Digital Meters

The M2 Organic LED Digital Monitor measures essential electrical system parameters with adjustable alarms and an auto-dimming display. The M2 Monitors include a MOSFET External Circuit Relay (ECR) which can be used to control external circuits based on any value measured by the M2.

- Auto-dimming, bright Organic LED display is easy to read
- 80dB alarm on all models
- Isolated 500mA MOSFET relay
- Includes external DC Shunt or AC Current Transformer when required

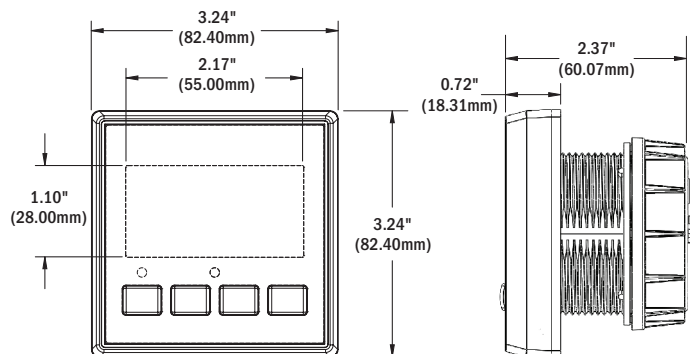
Specifications

Display Size	55mm x 28mm
Power Supply Voltage	7-70V DC
Range (Power Consumption)	0.3W – 1.0W
Variable with voltage, display intensity, and sleep mode	

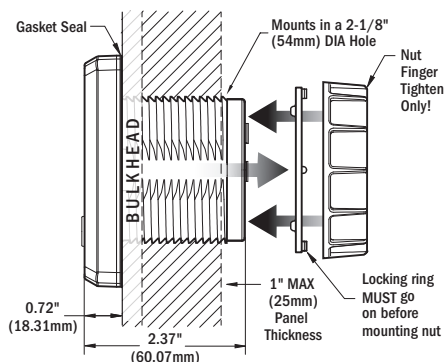
Regulatory

Monitor face is IP66 - protected against powerful water jets when installed according to instructions

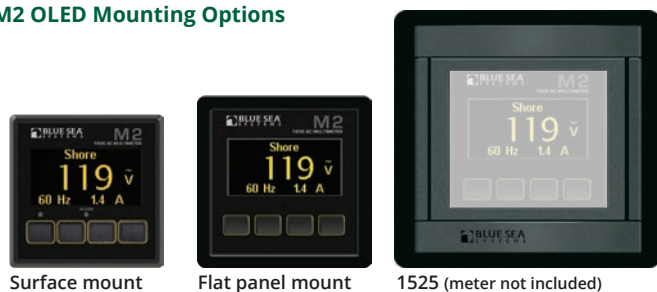
M2 OLED Dimensions



M2 OLED Surface Mount



M2 OLED Mounting Options



PN	Description	Width in (mm)	Height in (mm)
1525	360 Blank Panel - M2 OLED	4.88 (123.83)	4.75 (120.65)



TECH tip™

State-of-Charge Explained

Battery State-of-Charge (SoC)

Knowing the State-of-Charge of your battery is like knowing the amount of fuel in your gas tank. To avoid getting stranded with a dead battery, accurate battery bank monitoring is essential.

Voltmeter Method—Voltage can be used to measure of the SoC of your battery. The difference from a fully charged battery to a fully discharged battery is only 1.0V in a 12V system, so the meter must have good resolution and accuracy. This method is generally sufficient to monitor batteries which experience intermittent use, such as starter or thruster batteries. However, a battery must not have been charged or discharged for over 12 hours for this measurement to be trustworthy. This makes the Voltmeter Method unsuitable for monitoring house batteries which charge and discharge often.

Amp-Hour Method—A convenient and accurate way to measure SoC is with an Amp-Hour Monitor. This is a complex calculation of the energy available, energy consumed, and energy returned to the battery during charging. SoC can be expressed as amp-hours used, amp-hours remaining until the battery is empty, or time remaining until the battery is empty. The advantage of this method is that it works well for batteries in a constant state of charge and discharge.

AC Meters



PN	1836	1837	1838
Description	AC Ammeter	AC Voltmeter	AC Multimeter
Functions	Monitors current on two circuits	Monitors voltage on two circuits or both legs of 120/240V	Monitors voltage, current, frequency, and power on two circuits or both legs of 120/240V
Voltage			
Accuracy	--	± 1.0%	± 1.0%
Range	--	50V–250V AC (RMS)	50V–250V AC (RMS)
Resolution	--	1V AC	1V AC
Current			
Current Transformer	1 x PN 8256 (150A/50mA)	--	1 x PN 8256 (150A/50mA)
Accuracy	± 2.0%	--	± 2.0%
Range	0A–150A (300A optional) †	--	0A–150A (300A optional) †
Resolution (100 to 150)	1A	--	1A
Resolution (0.0 to 99.9)	0.1A	--	0.1A
Frequency			
Range	--	--	40Hz–90Hz
Resolution	--	--	1 Hz
Power			
Range	--	--	0W–45kW
Resolution (0W–9990W)	--	--	10W
Resolution (10kW–45kW)	--	--	0.1kW
Alarm/Relay Activation	High and Low Current	High and Low Voltage	High and Low Voltage, Current, and Low Battery

† Will achieve 300A with an optional current transformer PN 1829 (p. 133)

DC Meters



PN	1830	1832	1833	1834
Description	DC SoC Monitor	DC Ammeter	DC Voltmeter	DC Multimeter
Functions	Monitors state-of-charge on one battery bank and voltage on three battery banks	Monitors current on two circuits	Monitors the voltage on up to four battery banks	Monitors the voltage of two battery banks and the current on one circuit
Voltage				
Voltages	12V, 24V, 48V	--	--	--
Accuracy	± 1.0%	--	± 1.0%	± 1.0%
Range	8V–70V DC	--	8V–70V DC	8V–70V DC
Resolution	0.01V DC	--	0.01V DC	0.01V DC
Current				
Shunt	1 x PN 8255 (500A/50mV)	1 x PN 8255 (500A/50mV)	--	1 x PN 8255 (500A/50mV)
Accuracy	± 1.0%	± 1.0%	--	± 1.0%
Range	–500A to 500A	–500A to 500A	--	–500A to 500A
Resolution (100 to 500)	1A	1A	--	1A
Resolution (99.9 to 500)	0.1A	0.1A	--	0.1A
Alarm/Relay Activation	High and Low Voltage, High Current, and Low Battery	High and Low Voltage, High Current, and Low Battery	High and Low Voltage	High and Low Voltage, High Current, and Low Battery

Related Products



ML Series Remote Battery Switches
p. 30-31



DC Shunts
p. 133



AC Current Transformer
p. 133



Floyd Bell Turbo Series Alarm
p. 136

DC Digital Meters

Monitors key DC functions

- Large, bright LED characters
- Three levels of brightness
- Splash-proof front
- Easy to surface mount in a 2" round hole

Specifications

Display Character Size	9/16"
Power Supply Voltage	8-50V DC
Max. Power Consumption	1.00W*
Min. Power Consumption	0.60W*



8251

DC Voltmeter with Alarm

Range	0-60V DC
Resolution	0.01V DC
Accuracy (% of Reading)	± 0.5%**



8248

DC Multimeter with Alarm

Range	0-60V DC
Resolution	0.01V DC
Accuracy (% of Reading)	± 0.5%**

Current Measurement:

Shunt	500A/50mV
Range	± 500A DC
Resolution (-100 to -500)	1A DC
Resolution (-99.9 to +500)	0.1A DC
Accuracy (% of Reading)	± 0.5%**



8236

DC Ammeter

Shunt	500A/50mV
Range	± 500A DC
Resolution (-100 to -500)	1A DC
Resolution (-99.9 to +500)	0.1A DC
Accuracy (% of Reading)	± 0.5%**



8235

DC Voltmeter

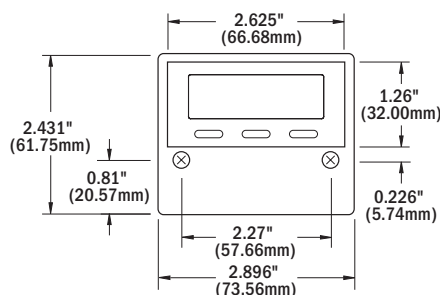
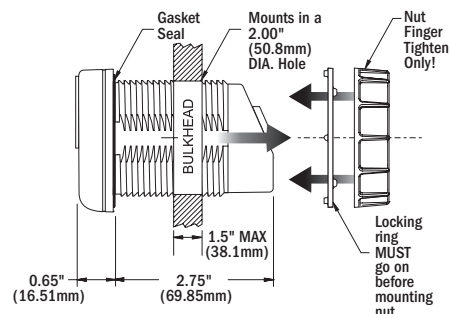
Voltage Measurement:

Range	0-60V DC
Resolution	0.01V DC
Accuracy (% of Reading)	± 0.5%**

PN	Description	Measurement	Sleep Mode	Alarms	Included Shunt
8248	DC Multimeter with Alarm	Voltage, current	Programmable	High and low voltage	500A PN 8255 (p. 133)
8235	DC Voltmeter	Voltage	Manual	---	---
8251	DC Voltmeter with Alarm	Voltage	Programmable	High and low voltage	---
8236	DC Ammeter	Current	Manual	High and low voltage	500A PN 8255 (p. 133)

Digital Meter Front Panel Mount

Surface mounting features a finger nut and locking ring for quick and easy installation into a 2.00" (50.8mm) diameter hole.



DC Digital Voltmeter Panels

Enables voltage monitoring on up to 3 battery banks with one digital meter

- Includes 8235 DC Digital Voltmeter
- 4 digit LED display—Displays voltage from 0-60V DC
- 3 position switch for multiple battery banks



8051



1474

PN	Width in (mm)	Height in (mm)
8051	5.25 (133.35)	3.75 (95.25)
1474	4.88 (123.83)	4.75 (120.65)

* Variable with voltage, display intensity, segments illuminated, and sleep mode

**± 1 least digit of resolution

AC Digital Meters

Monitors key AC functions

- Large, bright LED characters
- Three levels of brightness
- Splash-proof case
- Easy to surface mount in a 2" round hole

Specifications

Display Character Size	9/16"
Input Voltage	80-249V AC*
Maximum Power Consumption	1.00W**
Standby Power	0.60W**



8238

AC Ammeter

Current Measurement

Current Transformer	150A/50mA
Range 1 (Resolution 0.01A)	0-9.99A AC (RMS)
Range 2 (Resolution 0.1A)	10-150.0A AC (RMS)
Accuracy (% of Reading)	± 1.0%***



8239

AC Frequency Meter

Frequency Measurement

Range	40-90Hz
Resolution	0.1Hz
Accuracy (% of Reading)	± 0.1%***
Calibrated with sine wave input	



8247

AC Multimeter with Alarm

Voltage Measurement

Range	80-249V AC*
Resolution	0.1V AC

Accuracy (% of Reading)

90-249V AC (RMS)	± 1.0%***
70-90V AC (RMS)	± 5.0%***

Current Measurement

Current Transformer	150A/50mA
Range 1 (Resolution 0.01A)	0.00-9.99A AC (RMS)
Range 2 (Resolution 0.1A)	10.0-150.0A AC (RMS)
Accuracy (% of Reading)	± 1.0%***

Frequency Measurement

Range	40-90Hz
Resolution	0.1Hz
Accuracy (% of Reading)	± 0.1%***
Calibrated with sine wave input	

Power Measurement

Range 1 (Resolution 10W)	0-9990W
Range 2 (Resolution 0.1kW)	10-45kW
Accuracy (% of Reading)	± 5%***
Included Current Transformer 8256 (p. 133)	



8237

AC Voltmeter

Voltage Measurement:

Range	80-249V AC*
Resolution	0.1V AC

Accuracy (% of Reading)

90-249V AC (RMS)	± 1.0%***
70-90V AC (RMS)	± 5.0%***

PN	Description	Measurement	Sleep Mode	Alarms
8238	AC Ammeter	Current	Manual	---
8239	AC Frequency Meter	Frequency	Manual	---
8247	AC Multimeter with Alarm	Voltage, current, frequency, power	Programmable	High and low voltage High current
8237	AC Voltmeter	Voltage	Manual	---

* For 120 & 240 Volt AC single phase systems

** Variable with voltage, display intensity, segments illuminated, and sleep mode

*** ± 1 least digit of resolution

120/240V AC Digital Meter Mounting Panel

For monitoring 120/240V AC Systems

- Use with AC Digital Multimeter 8247 for monitoring 120/240V AC Systems
- Monitor Line 1 or Line 2 to Neutral and Line 1 to Line 2 voltages
- Includes two additional Current Transformers 8256 (p. 133) and mounting screws



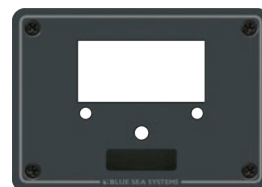
8410 (meter not included)
120/240V AC Digital Meter Blank Panel

PN	Width in (mm)	Height in (mm)
8410	5.25 (133.35)	3.75 (95.25)

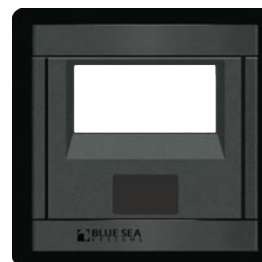
Analog and Digital Meter Mounting Panels

Provides an easy method of mounting meters

- Panel mounts standard 2-3/4" Analog or Digital Meters
- Includes mounting screws and center adjustment hole plug



8013 (meter not included)
Accepts (1) 2-3/4" Analog or Digital Meter



1475 (meter not included)
Accepts (1) 2-3/4" Analog or Digital Meter

PN	Width in (mm)	Height in (mm)
1475	4.88 (123.83)	4.75 (120.65)
8013	5.25 (133.35)	3.75 (95.25)

Mini OLED DC Voltmeter **NEW**

Monitors DC voltage on a bright, waterproof, daylight readable OLED screen

- Compact size enables mounting in any convenient location
- IP66 waterproof
- Reverse polarity protected
- Mounts in a common 1-1/8 in hole



1733

Specifications

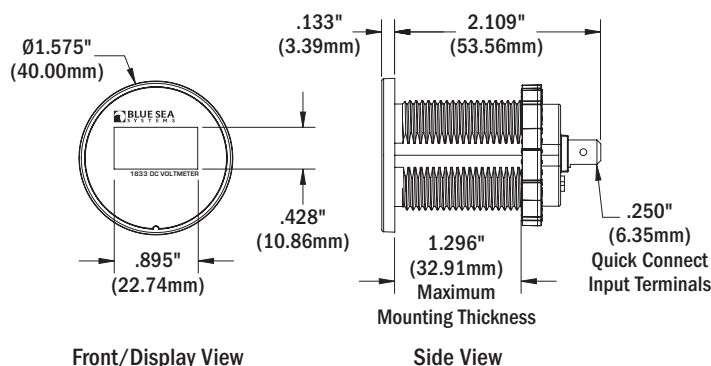
Nominal Voltage	12V / 24V DC
Voltage Accuracy	± 1.0%
Voltage Range	8V-36V DC
Maximum Operating Current	15mA
Resolution	0.01V DC
Cutout Dimensions in (mm)	1-1/8" (29 mm) diameter

Regulatory

IP66 - protected against powerful water jets (see inside back cover)

PN	Description
1733	Mini OLED DC Voltmeter

Specifications subject to change. See bluesea.com for current information.



Front/Display View

Side View

Mini Clamp Multimeter

Compact and feature-rich AC/DC Multimeter simplifies diagnosis of marine electrical problems

- Clamp allows measurement of AC and DC current in wires without disturbing the circuits or contacting live terminals
- Compact size allows comfortable one hand operation, portability, and access to confined areas
- Auto range simplifies operation by automatically selecting the range that best fits the data
- Additional functions include: Data Hold, Overload Display, and AutoPower-Off
- True RMS AC measurement is accurate for normal sine wave and modified sine wave inverter output

Specifications

AC Amperes	0.01-400 Amps
AC Voltage	0.001-600 Volts
DC Amperes	0.01-400 Amps
DC Voltage	0.001-600 Volts
Resistance/Continuity Alarm	0.1-40MΩ
Measurement Resolution	4300 counts

Regulatory

CE Marked
CAT III, 600 Volts



8110
Includes test leads
and carrying case

PN	Description
8110	Mini Clamp Multimeter

Vessel Systems Monitor VSM 422

The Vessel Systems Monitor VSM 422 performs comprehensive monitoring of four boat systems in one compact meter, saving space and money.

By monitoring DC (including battery state of charge), AC, tanks, and bilge pump, the VSM 422 alerts boaters to problems before they become emergencies.

The ability to monitor state of charge is critical to safe boating. By using a complex calculation of voltage, amperage, and amp-hours remaining, the VSM 422 is able to provide accurate and timely information about state of charge on the house battery to help boaters know when it's time to recharge. The VSM 422 also monitors temperature on the primary battery with the included Battery Temperature Sensor.

AC monitoring includes voltage, amperage, wattage, and frequency.

Tank monitoring for up to three tanks includes alarm functions for high and low levels, and bilge pump monitoring includes pump active, cycle count, and duration.

With its user-friendly interface, intuitive display modes, and versatile case design, the Vessel Systems Monitor VSM 422 is an excellent replacement for four separate system monitors.

Retail Packaging Includes:

head unit, surface mount bezel, surface mount gasket, DC Current Shunt 8255, AC Current Transformer 8256, Battery Temperature Sensor 1820, connectors, mounting screws and screw driver

DC Specifications

Nominal System Voltage 12 or 24V
Operating Voltage 8.5-33.0V
Minimum Current Draw 35mA @ 12V, backlight off
18.8mA @ 24V, backlight off

Voltage Accuracy +/- 0.5%
Current Range 0-500A
Current Accuracy +/- 1.0%

AC Specifications

Nominal System Voltage 120V @ 60Hz, North America
230V @ 50Hz, Typical of Europe
Operating Voltage 0-300V
Voltage Accuracy (RMS) +/- 0.5%
Current Range 0-150A
Current Accuracy (RMS) +/- 2.0%
Frequency 40-90Hz

Regulatory

CE Marked for E60945 electromagnetic interference
Unit face is IP67-protected against immersion up to 1 meter for 30 minutes (see inside back cover)

VSM 422 Surface Mount Gasket creates a waterproof seal on unit face

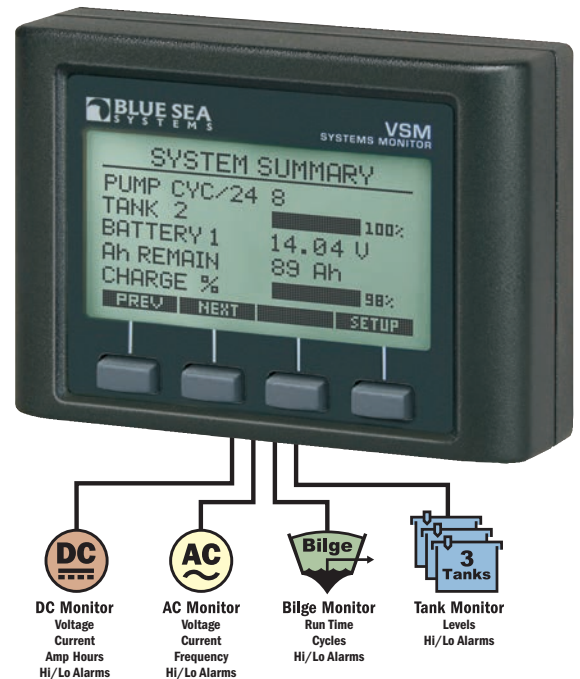
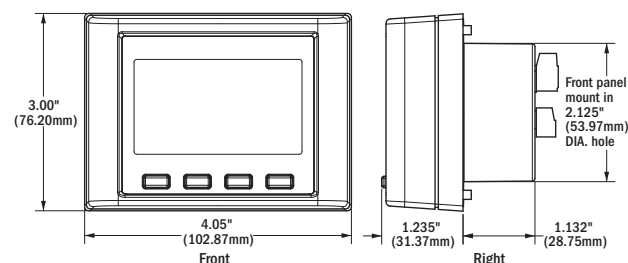
Tank Senders Supported:

10 - 180 Ω VDO

240 - 33 Ω Teleflex

Blue Sea Systems Ultrasonic Tank Senders (sold separately)

- for diesel, water, or waste 1810 (32" tank depth)
- for gasoline 1811 (24" tank depth)



PN	Description
1800	VSM retail packaged in box
1801	VSM retail packaged in clam
1810	32" Diesel, Water, Waste tank sender for exclusive use with VSM 422
1811	24" Gasoline tank sender for exclusive use with the VSM 422
1820	Battery Temperature Sensor for exclusive use with VSM 422



1800

1801

1820



1810

1811

VSM 422 Panel Mounting Options



1325 (meter not included)



1519 (meter not included)

PN	Description	Width in (mm)	Height in (mm)
1325	360 Mounting Kit Module	--	--
1519	360 Blank Panel - VSM 422	4.88 (123.83)	4.75 (120.65)

DC Analog Meters

Meters with backlighting for low light conditions

- Includes appropriate external DC shunt (p. 133) when required
- Backlit meter face (separate 12 or 24V DC backlight connections)
- DIN Meters include a terminal cover included to prevent accidental short circuit
- DIN Meters are a standard European 72mm design
- DIN Meter face is white matte with black printed scale and knife-edge pointer



8028



8003



1050

PN	Function	Operating Amps (Meter)	Operating Amps (Backlight)	Connection
8028	Micro Voltmeter 8–16V DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	2 wire, 3 connections for backlight
8243	Micro Voltmeter 18–32V DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	2 wire, 3 connections for backlight
8003	Standard Voltmeter 8–16V DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	2 wire, 3 connections for backlight
8240	Standard Voltmeter 18–32V DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	2 wire, 3 connections for backlight
1050	DIN Voltmeter 0–16V	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	2 wire to DC positive (+) and negative (-) 3 connections for backlight
1051	DIN Voltmeter 18–32V	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	2 wire to DC positive (+) and negative (-) 3 connections for backlight



8038



8005



1052

PN	Function	Operating Amps (Meter)	Operating Amps (Backlight)	Shunt Type	Connection
8038	Micro Ammeter 0–15A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	Internal	2 wire inline, 3 connections for backlight
8041	Micro Ammeter 0–50A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight
8005	Standard Ammeter 0–25A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	Internal	2 wire inline, 3 connections for backlight
8022	Standard Ammeter 0–50A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight
8017	Standard Ammeter 0–100A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight
8018	Standard Ammeter 0–150A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight
8019	Standard Ammeter 0–200A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight
1052	DIN Ammeter 0–25A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	Internal	2 wire inline no other power required 3 connections for backlight
1053	DIN Ammeter 0–50A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire inline no other power required 3 connections for backlight
1054	DIN Ammeter 0–100A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire inline no other power required 3 connections for backlight
1055	DIN Ammeter 0–150A DC	1 mA at full scale	16 mA @ 12V DC, 20 mA @ 24V DC	External—50 mV at meter full scale	2 wire inline no other power required 3 connections for backlight



8254



8253

PN	Function	Shunt Type	Connection	Meter Face Size in (mm)
8252*	Zero Center Ammeter 50–0–50A DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight	2.75 (69.85)
8253*	Zero Center Ammeter 100–0–100A DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight	2.75 (69.85)
8254*	Zero Center Micro Ammeter 50–0–50A DC	External—50 mV at meter full scale	2 wire from shunt, 3 connections for backlight	2.00 (50.80)

*Meters read both discharge and charge current

DC Analog Voltmeter Panels

Enables voltage monitoring on up to 3 battery banks with one analog meter

- Includes standard 8003 DC Analog Voltmeter
- Displays voltage from 8–16V DC
- 3 position switch for multiple battery banks



8015

Traditional Metal

Width in (mm) 5.25 (133.35)
Height in (mm) 3.75 (95.25)



1473

360 Panel System

Width in (mm) 4.88 (123.83)
Height in (mm) 4.75 (120.65)

AC Analog Meters

Meters with backlighting for low light conditions

- Includes appropriate external transformer (p. 133) when required
- Backlit meter face (separate 12 or 24V DC backlight connections)
- DIN Meters include a terminal cover included to prevent accidental short circuit
- DIN Meters are a standard European 72mm design
- DIN Meter face is white matte with black printed scale and knife-edge pointer



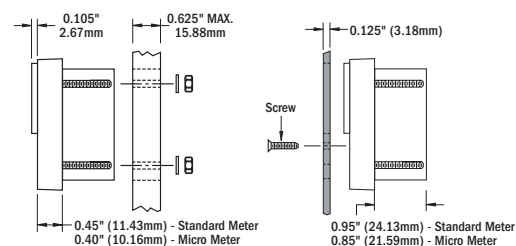
8244



9353



1056



Surface Mount

Panel Mount

PN	Function	Operating Amps (Meter)	Operating Amps (Backlight)	Connection
8244	Micro Voltmeter 0-150V AC	1 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire to AC hot and neutral, 3 connections for backlight
8245	Micro Voltmeter 0-250V AC	1 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire to AC hot and neutral, 3 connections for backlight
9353	Standard Voltmeter 0-150V AC	1 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire to AC hot and neutral, 3 connections for backlight
9354	Standard Voltmeter 0-250V AC	1 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire to AC hot and neutral, 3 connections for backlight
1056	DIN Voltmeter 0-150V AC	1 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire to AC hot and neutral, 3 connections for backlight
1057	DIN Voltmeter 0-250V AC	1 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire to AC hot and neutral, 3 connections for backlight



8246



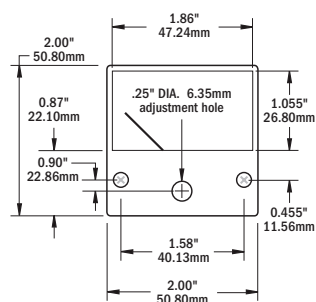
9630



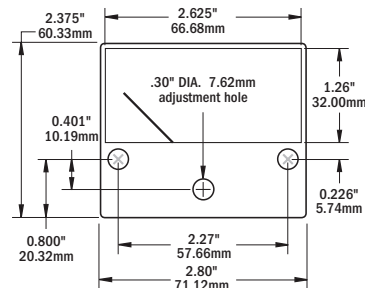
1058

PN	Function	Operating Amps (Meter)	Operating Amps (Backlight)	Connection
8246	Micro Ammeter 0-50A AC	50 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire from coil slipped over wire to be measured, 3 connections for backlight
9630	Standard Ammeter 0-50A AC	50 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire from coil slipped over wire to be measured, 3 connections for backlight
8258	Standard Ammeter 0-100A AC	50 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire from coil slipped over wire to be measured, 3 connections for backlight
1058	DIN Ammeter 0-50A	50 mA at full scale	16 mA@12V DC, 20 mA@24V DC	2 wire from coil slipped over wire to be measured, 3 connections for backlight

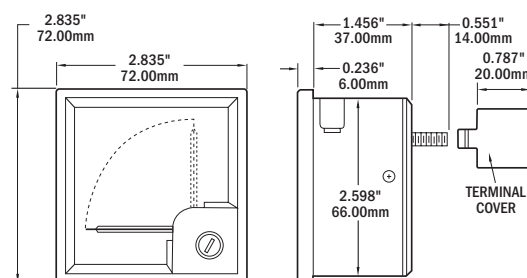
Micro Meter



Standard Meter











DIN Meter



TERMINAL COVER

Meter Comparison






DC Voltmeters

Style	M2 Digital	Digital		Mini	Analog Micro		Analog Standard		DIN		M2 Digital	Digital
												
PN	1833	8235	8251*	1733	8028	8243	8003	8240	1050	1051	1832	8236
Measurement	8-70V	0-60V	0-60V	8-36V	8-16V	18-32V	8-16V	18-32V	8-16V	18-32V	±500A	±500A
Channels	4 x 8-70V	1 channel		1 channel	1 channel		1 channel		1 channel		2 x ±500A	1 channel






* with alarm

DC Ammeters

DC Ammeters






Style	Analog Micro		Analog Standard					DIN				Zero Center Micro	Zero Center Standard	
														
PN	8038	8041	8005	8022	8017	8018	8019	1052	1053	1054	1055	8254	8252	8253
Measurement	0-15A	0-50A	0-25A	0-50A	0-100A	0-150A	0-200A	0-25A	0-50A	0-100A	0-150A	50-0-50A	50-0-50A	100-0-100A
Channels	1 channel		1 channel					1 channel				1 channel	1 channel	

AC Voltmeters

Style	M2 Digital	Digital	Analog Micro			Analog Standard		DIN	
									
PN	1837	8237	8244	8245	8246	9353	9354	1056	1057
Measurement	50–250V AC	80–249V AC	0–150V AC	0–250V AC	0–50V AC	0–150V AC	0–250V AC	0–150V AC	0–250V AC
Channels	2 x 50–250V AC	1 channel	1 channel			1 channel		1 channel	








AC Ammeters

AC Frequency

Style	M2 Digital	Digital	Analog Standard		DIN	Digital
						
PN	1836	8238	9630	8258	1058	8239
Measurement	0-150A AC	0-150A AC	0-50A AC	0-100A AC	0-50A AC	40-90Hz
Channels	2 x 0-150A AC	1 channel	1 channel		1 channel	1 channel

DC SoC Monitor

Multimeters

Style	M2 Digital	Mini Clamp	Vessel Systems Monitor	M2 Digital	Digital	M2 Digital	Digital
							
PN	1830	8110	1800 - 1801	1834	8248	1838	8247
Measurement	12V, 24V, 48V 8-70V DC ±500A DC	0.01-400A AC 0.001-600V AC 0.01-400A DC 0.001-600V DC	0-150A AC, 0-150V AC, 0-500A DC, 8.5-33.0V DC, Bilge, Tank, State of Charge	8-70V DC ±500A DC	0-60V DC ±500A DC	50-300V AC 0-150A 40-90Hz 0-9990W	80-249V AC 0-150A AC 40-90Hz 0-9990W
Channels	3 x 8-70V DC 1 x ±500A DC 1 x SoC	-	up to 3 channels	3 x 8-70V DC 1 x ±500A DC	1 channel	2 x 50-250V AC 2 x 0-150A	1 channel

2 Inch Round Gauges

Provides monitoring of key functions

Gauges are offered for use in 360 Panels and are not available for retail purchase.

- Watertight, fog resistant, and anti-scratch glass face
- Edge-lit
- Will fit panels up to 0.8" thickness

Specifications

Temperature Max. Operating	158°F (70°C)
Temperature Min. Operating	-4°F (-20°C)
Operating Current (with edge-light)	180mA
Operating Current (no edge-light)	<100mA
Gauge diameter	2.00" (50.80 mm)
Mounting hole diameter	2.06" (52.40 mm)
Back clamp nuts torque	5-7 in-lb

Regulatory

CE Marked



1022B



1023B



1024B



1026B
gauge is not edge-lit



1027B



1028B



1029B



1030B

PN	Function	Voltage Max. Operating	Depth in (mm)
1020B	Fuel Level E-1/2-F	16V DC	1.75 (44.45)
1021B	Potable Water Level E-1/2-F	16V DC	1.75 (44.45)
1022B	Engine Temp 100-250°F	16V DC	1.75 (44.45)
1023B	Oil Pressure 0-80 PSI/Bar	16V DC	1.75 (44.45)
1024B	Water Pressure 0-30 PSI/kPa	16V DC	2.10 (53.54)
1025B	Voltmeter 10-16 Volts	16V DC	1.75 (44.45)
1026B	Hour Meter—10,000 hrs	32V DC	2.40 (60.96)
1027B	Battery Condition Indicator	16V DC	3.00 (76.20)
1028B	DC Ammeter 60-0-60 Amps	16V DC	1.75 (44.45)
1029B	Clock—Quartz Analog	16V DC	2.70 (68.58)
1030B	Tank Level	16V DC	1.75 (44.45)

Gauge Panel

For 2 Inch Round Gauges

Small Format Label Sets
- 8214 and 8217 (p. 138)

PN	Width in (mm)	Height in (mm)	Depth in (mm)
1510	4.88 (123.83)	4.75 (120.65)	0.50 (12.70)



1510 (Gauge not included)

DC Shunts

Use with DC Ammeters

- For continuous operation, it is recommended that shunts not be run at more than two-thirds (66%) the rated current under normal conditions

Specifications

Shunt Type	Resistive
Full Scale	50 mV
Amperage Max. Operating	66% of Rated Current
Amperage Int. Rating (5 min.)	100%—Full scale rating
Amperage Int. Rating (3 sec.)	300%—Full scale rating



9228



9233

PN	For Use With	Ratio
9228	Analog Ammeter	50A DC/50mV DC
9230	Analog Ammeter	100A DC/50mV DC
9233	Analog Ammeter	200A DC/50mV DC
8255	Digital Ammeter	500A DC/50mV DC



8255

AC Current Transformers

Use with AC Ammeters

Specifications

8073 Dimensions	0.60 in (15.24 mm) Inside Diameter 1.38 in (35.05 mm) Outside Diameter
1829 Dimensions	1.25 in (31.75 mm) Inside Diameter 2.68 in (68.2 mm) Outside Diameter

PN	For Use With	Ratio
8073	Analog Ammeter	50A AC/50mA AC
8257	Analog Ammeter	100A AC/50mA AC
8256	Digital and M2 Ammeter	150A AC/50mA AC
1829	Digital Ammeter	300A AC/50mA AC

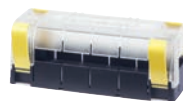


1829



8073

Related Products



2719 Enclosure
p. 86



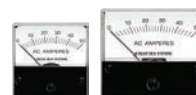
M2 OLED
Digital Monitors
p. 124-125



Digital Meters
p. 126-127



VSM 422
p. 129



Analog Meters
p. 130-131



DIN Meters
p. 130-131

ACCESSORIES

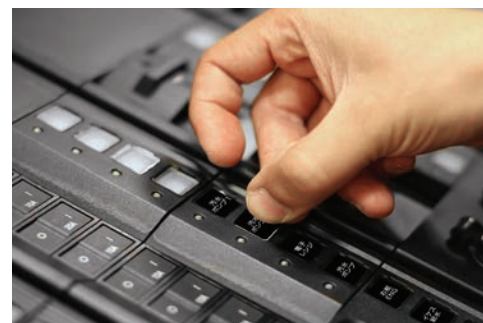
Blue Sea Systems offers a range of panel accessories which support four power distribution panel styles

ABYC standards mandate isolation of AC and DC components on combination panels. Stackable, screw-down covers protect AC components from coming into contact with tools, personnel, and DC wiring. Traditional Metal and 360 Panel System accessories include modular back covers for panels.

Toggle Guards and Lockout Slides prevent unintentional circuit breaker switching which ensures safe management of power distribution panels.

LED Indicator Lights are easy to install, available in an assortment of colors, and provide visual indication of power or alerts.

Over 500 standard labels are available in large, small, and square formats for use on Blue Sea Systems products including fuse blocks, busbar insulating covers, panels, and Contura switches. Custom Labels are available in any language and ship rapidly from the in-house printing facility. Labels can be easily ordered online at www.blueseasystems.com/labels.



ACCESSORIES

Floyd Bell Turbo Series Alarm | 136

Insulating Back Covers | 136, 137

120V AC Dual Outlet | 136

LED Indicators | 137

Lockout Slides | 137

Toggle Guard | 138

Labels | 138-141



©Photo by Neil Rabinowitz

Concorde Yachts of Washington uses Blue Sea Systems **Traditional Metal Panels** with **Toggle Guards** aboard their 41 Sport Cruiser.

Floyd Bell Turbo Series DC Audible Alarm

Extra loud intermittent beep tone audibly alerts operator



Features

- Rotating bezel adjusts alarm volume
- Threaded attachment ring
- Fits 1 inch round aperture

Specifications

Voltage Nominal	12V / 24V DC
Operating Voltage	5–30V DC
Operating Current	5 mA @ 5V DC 25 mA @ 30V DC
Operating Frequency	2900 ± 250 Hz
Terminals	Male 1/4" Quick Connect

Regulatory

IP68 - Withstands water submergence and dust exposure
UL Recognized

PN	Description
1070	Floyd Bell Turbo Series Alarm

Related Products



m LVD
Low Voltage Disconnect
p. 28

360 Panel 12V to 24V DC Conversion Kit

Converts indicator LEDs from 12V DC systems to 24V DC systems



4113

Features

- Requires one kit per 12 Volt DC circuit breaker module
- Includes wire harness and panel identification label

PN	Description
4113	360 Panel 12V to 24V DC Conversion Kit

360 Panel Insulating Back Covers

Provides electrical insulation for exposed panel backs



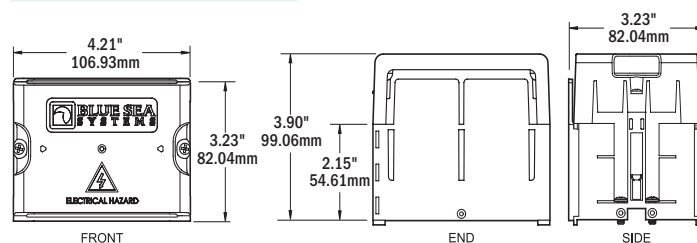
Features

- Isolation of AC from DC components
- Meets ABYC safety requirements for panels with combined AC and DC loads
- Modular design consists of interlocking pieces
- Interlocking pieces can be stacked to accommodate large components
- Cover breakouts allow wire access in any direction

Specifications

Material UL 94-V0 Polycarbonate
Hardware 2 qty. #6 Phillips-drive sheet metal screws,
4 qty. #8-32 x 0.5" Phillips-drive machine screws
with lock washers

PN	Description
1331	Cover for 1 module



360 Panel Blank and 120V AC Dual Outlet

Provides a 360 Panel System platform for mounting equipment, switching, and monitoring functions

- 1518 is suitable for mounting accessories and for pad printing



1518

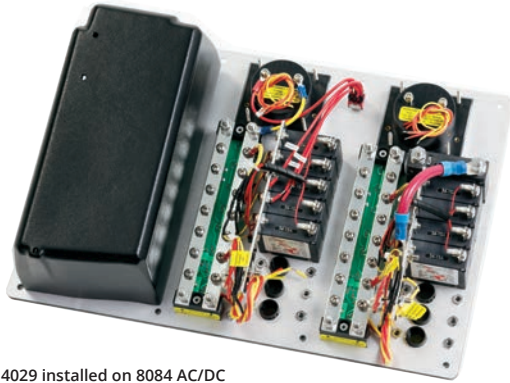


1479 with 120V AC Dual Outlet
1479100 without 120V AC Dual Outlet

PN	Description	Width in (mm)	Height in (mm)	Depth in (mm)
1518	Blank Panel	4.88 (123.83)	4.75 (120.65)	0.50 (12.70)
1479	120V AC Dual Outlet Panel	4.88 (123.83)	4.75 (120.65)	1.00 (25.40)
1479100	Blank Outlet Panel	4.88 (123.83)	4.75 (120.65)	0.50 (12.70)

AC Insulating Back Covers

Provides electrical insulation for many of Blue Sea Systems Traditional Metal circuit breaker panels



4029 installed on 8084 AC/DC Circuit Breaker Panel (p. 114)

Features

- Isolation of panel AC components from DC components
- Provides mechanical protection for panel backs
- Lightweight material is easily drilled for wire pass-through
- Meet ABYC safety requirements
- 4029 and 4031—Used only for Blue Sea Systems toggle circuit breaker panels

Specifications

Material UL-94-V0 Thermoplastic

PN	Description
4026	Cover for 5-1/4" x 3-3/4"
4027	Cover for 5-1/4" x 7-1/2"
4028	Cover for 10-1/2" x 7-1/2"
4029	Cover for 1 Column x 8 Position + Meter
4031	Cover for 2 Column x 10 Position + Meter

LED Indicator Lights

Directly replaces LEDs used in Blue Sea Systems Traditional Metal circuit breaker panels



Features

- Simple push-in installation mounts in any thickness material
- Useful as general indicator and alarm lights

Specifications

Mounting Hole Size 11/64 in (4.36 mm)
Wire Gauge 26 AWG

PN	Color	Nominal Voltage	Current (mA)	Power Consumption (mW)	Circuit
8033	Amber	12 / 24V DC	1.5 @ 12V, 3.1 @ 24V	19 @ 12V, 75 @ 24V	Resistor
8171	Red	12 / 24V DC	1.5 @ 12V, 3.2 @ 24V	19 @ 12V, 77 @ 24V	Resistor
8172	Green	12 / 24V DC	1.5 @ 12V, 3.0 @ 24V	19 @ 12V, 73 @ 24V	Resistor
8169	Amber	120V AC	2.3 @ 120V	278 @ 120V	Resistor
8066	Red	120V AC	2.7 @ 120V	326 @ 120V	Resistor
8034	Green	120V AC	2.3 @ 120V	278 @ 120V	Resistor
8167	Amber	250V AC	1.1 @ 250V	276 @ 250V	Resistor + Diode
8166	Red	250V AC	1.1 @ 250V	276 @ 250V	Resistor + Diode
8134	Green	250V AC	1.1 @ 250V	276 @ 250V	Resistor + Diode

C-Series Circuit Breaker Lockout Slide

Enables safe management of multiple AC sources which use double or triple pole circuit breakers



4130

4131

Features

- Allows only 1 of a pair of double pole or triple pole AC toggle circuit breakers to be activated at a time
- Ensures AC power from 2 sources will not be mixed
- Fits all double or triple pole C-Series Toggle Circuit Breakers (p. 70)
- Uses circuit breaker mounting screw holes
- Includes mounting screws

PN	Poles	AC Sources	Mounting
4130	2	2	#6 Pan Head Screw
4131	3	2	#6 Pan Head Screw

A-Series Circuit Breaker Lockout Slide

Enables safe management of multiple AC sources which use double pole circuit breakers



4125

4126

Features

- Allows 1 double pole AC toggle circuit breaker to be activated
- Ensures AC power from 2 or more sources will not be mixed
- Fits all double pole A-Series Toggle Circuit Breakers (p. 68)
- Uses circuit breaker mounting screw holes
- Includes mounting screws

PN	Poles	AC Sources	Mounting
4125	2	2	#6 Flat Head Screw
4126	2	3	#6 Flat Head Screw

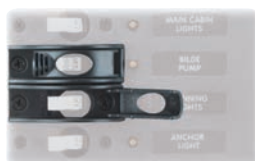
Toggle Guard

Protects toggle circuit breakers from accidental switching

Features

- Fits A-Series single pole toggle circuit breakers (p. 68)
- Fits all panel switches (p. 80)
- Uses circuit breaker mounting screw holes
- Includes mounting screws

PN	Description	Mounting
4100	Toggle Guard	#6 Flat Head Screw



4100 (2 shown)

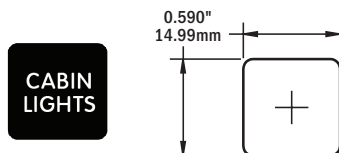
Square Format Labels

Used on 360 Panel System, Battery Management Panels, ST CLB Circuit Breaker Blocks, and WeatherDeck® Panels

Features

- Reinforced, weatherproof material
- Used on 360 Panels (p. 100), Battery Management Panels (p. 26), ST CLB Circuit Breaker Blocks (p. 60), SMS System (p.74), and WeatherDeck® Panels (p. 96)
- For a list of labels included see (p. 139)
- Available for purchase in sets or individually (p. 139-141)

PN	Color	Description	Quantity
4215	Black	DC Labels	30 Labels
4218	Black	DC Labels	30 Labels
4216	Black	DC Labels	60 Labels
4217	Black	DC Labels	120 Labels



4215

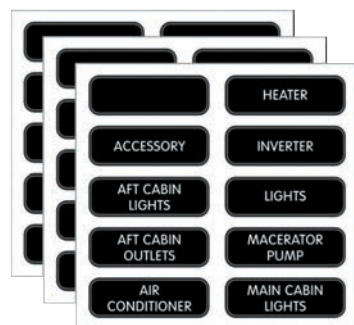
Large Format Labels

Used on Traditional Metal Panels, ST Glass Fuse Blocks, and Contura Water Resistant Fuse Panels

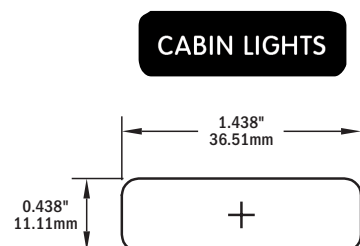
Features

- Reinforced, weatherproof material
- Used on Contura Water Resistant Fuse Panels 8053, 8054 (p. 98-99), ST Glass Fuse Blocks (p.48) and Traditional Metal Panels (p.101)
- Available for purchase in sets or individually (p. 139-141)
- For a list of labels included see (p. 139)

PN	Color	Description	Quantity
8031	Black	AC Panel Basic	30 Labels
8067	Black	AC Panel Extended	120 Labels
8030	Black	DC Panel Basic	30 Labels
8039	Black	DC Panel Extended	120 Labels



8031



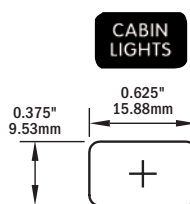
Small Format Labels

Used on most Blue Sea Systems Contura Switch Water Resistant Panels or ST Blade Fuse Blocks

Features

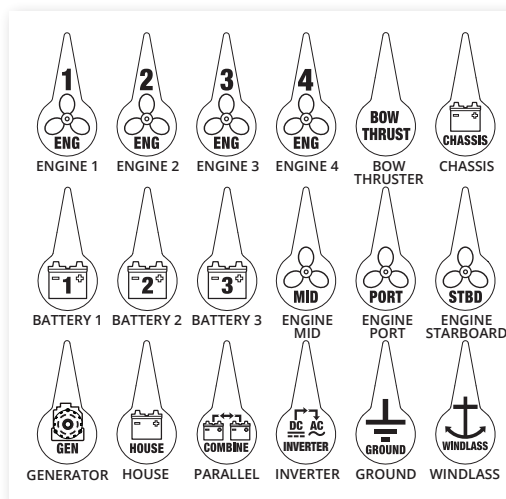
- Reinforced, weatherproof material
- Used on most Blue Sea Systems Contura Switch Water Resistant Panels (p. 98) and ST Blade Fuse Blocks (p. 49-53)
- See label sets, (p. 139)

PN	Color	Quantity
8214	Black	60 Labels
8217	Gray	60 Labels



ICON Circuit Identification Label Kit

Used on M Series, e Series, and HD Series Battery Switches (p. 18-23)



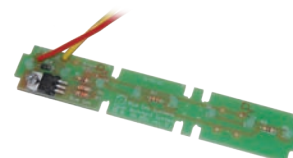
7902

Material White, Reinforced, Weatherproof
Quantity 18 labels

Related Products



4121 360 Panel
Label Backlight System



8065, 8069, 8383, 8384
Label Backlight System

Labels Included in Sets

4215

ACCESSORY
AERATOR
ANCHOR LIGHT
AUTOPILOT
BAIT PUMP
BILGE PUMP
BLOWER
CABIN LIGHTS
DEPTH SOUNDER
ELECTRONICS
GPS
HORN
INSTRUMENTS
KNOTMETER
NAV LIGHTS
RADAR
REFRIGERATOR
RUNNING LIGHTS
SEARCH LIGHT
SPARE
SPREADER LIGHTS
STEAMING LIGHT
STEREO
TRIM TABS
VHF
WASH DOWN
WATER PRESSURE
WATER PUMP
WINDLASS
WIPERS

4206 and 8031

(BLANK)
ACCESSORY
AFT CABIN LIGHTS
AFT CABIN OUTLETS
AIR CONDITIONER
AIR CONDITIONER 2
APPLIANCES
BATTERY CHARGER
CABIN OUTLETS
COMPUTER
ENTERTAINMENT CENTER
FWD CABIN LIGHTS
FWD CABIN OUTLETS
GALLEY
GALLEY OUTLETS
HEATER
INVERTER
LIGHTS
MACERATOR PUMP
MAIN CABIN LIGHTS
MAIN CABIN OUTLETS
MICROWAVE
OUTLETS
REFRIGERATOR
SPARE
STOVE
TV/STEREO
VCR
WASHER/DRYER
WATER HEATER

4217

(BLANK)
12 VOLT DC
12 VOLT DC OUTLETS
24 VOLT DC
AIR HORN
ANCHOR LIGHT MAIN
ANCHOR LIGHT MIZZEN
ANCHOR WASH DOWN
APPLIANCES
ARCH LIGHTS
AUTO/MAN
BAITWELL
BATTERY
BATTERY PARALLEL
BILGE ALARM
BILGE PUMP 2
BILGE PUMP ON-OFF-AUTO
BOW LIGHT
BOW THRUSTER
BRIDGE INSTRUMENTS
BRIDGE LIGHTS
CABIN
CB RADIO
CD PLAYER
CHART LIGHT
CHART PLOTTER
COCKPIT LIGHTS
COMPASS LIGHT
COURTESY LIGHTS
DAVIT

DC OUTLETS
DC SUB PANEL
DECK LIGHTS
DEFROSTER
DEPTH/SPEED
DIMMER
DISCHARGE PUMP
DOCKING LIGHT PORT
DOCKING LIGHT STBD
DOCKING LIGHTS
DOWN RIGGER
ELECTRIC HATCH
ENGINE HATCH
ENGINE INSTRUMENTS
ENGINE ROOM BLOWER
ENGINE ROOM LIGHTS
ENGINE SHUTDOWN
ENTRY STEP
FAN
FAN 2
FIRE ALARM
FIRE EXT
FISH FINDER
FISHING LIGHT
FISHWELL PUMP
FLOOD LIGHTS
FLYBRIDGE
FLYBRIDGE ELECTRONICS
FLYBRIDGE LIGHTS
FOG LIGHTS

FOREDECK LIGHT
FRESH WATER PUMP
FRESH WATER WASH DOWN
FUEL PUMP
FUEL TRANSFER
FURLER JIB
FURLER MAINSAIL
GALLEY
GAS ALARM
GPS/PLOTTER
HAILER
HAM RADIO
HEAD
HEATER
IGNITION
INSTRUMENT LIGHTS
INTERCOM HAILER
LAZARETTE LIGHTS
LIGHTER
LIGHTS
LIVEWELL
LOCKER LIGHTS
LPG CONTROL
MAIN
MAST LIGHTS
MASTHEAD LIGHT
MIZZEN FLOOD
NAVIGATION ELECTRONICS
NAVIGATION INSTRUMENTS
NAV LIGHT ANCHOR OFF NAV

ON-OFF
OUTLETS
PUMP
PUMPOUT
RADIO
ROD LOCKER
RUDDER ANGLE INDICATOR
SAILING CONTROLS
SAILING INSTRUMENTS
SALT WATER PUMP
SEAWATER WASH DOWN
SHOWER SUMP PUMP
SOLAR PANEL
SSB
START-STOP
STERN LIGHT
STROBE LIGHT
SUMP PUMP
TRANSFER
TRICOLOR LIGHT
TROLLING MOTOR
WASHDOWN PUMP
WASHDOWN
WINCHES
WIND GENERATOR
WIND INSTRUMENTS
WINDSHIELD WASHER
WIPER CENTER
WIPER PORT
WIPER STBD

8214 and 8217

(BLANK)
12 VOLT DC
24 VOLT DC
ACCESSORY
AERATOR
ANCHOR LIGHT
AUTO PILOT
BAIT PUMP
BAITWELL
BATTERY
BATTERY CHARGER
BILGE
BILGE PUMP
BLOWER
BOW LIGHT
CABIN
CABIN LIGHTS
CB RADIO
CELLULAR PHONE
CHARGER INVERTER
CHART PLOTTER
DECK LIGHTS
DEPTH SOUNDER
DOWN RIGGER
ELECTRONICS
FAN
FISH FINDER
FISHING LIGHT
FLOOD LIGHTS
FUEL PUMP
GAS ALARM
GPS
HORN
IGNITION
INSTR. LIGHTS
INVERTER
KNOT METER
LIGHTS
LIVEWELL
NAV LIGHTS
OUTLETS
RADIO
RADAR
REFRIGERATION
RUNNING LIGHTS
SEARCH LIGHT
SPARE
SPREADER LIGHTS
STEAMING LIGHT
STEREO
STROBE LIGHT
TRICOLOR LIGHT
TRIM TABS
VHF
WASH DOWN
WATER PRESSURE
WATER PUMP
WINCHES
WINDLASS
WIPERS

4218

12 VOLT DC
24 VOLT DC
ALARM
BILGE PUMP
BILGE PUMP 2
BILGE PUMP 3
BILGE PUMP 4
BOW THRUSTER
CLOCK
DC MAIN
DC SUB PANEL
ELECTRONICS
ENGINE
ENGINES
ENG 1/ENG 2
GENERATOR
HOUSE
HOUSE/ENG
HOUSE/GEN
INVERTER
LIGHTS
MEMORY
PORT/STBD ENG
RADAR
RADIO
SOLAR PANEL
VHF
WINCH
WINDLASS
Blank (Write On)

4216

(BLANK)
12 VOLT DC
12 VOLT DC OUTLETS
ANCHOR WASH DOWN
BAITWELL
BATTERY
BATTERY PARALLEL
BILGE
BILGE PUMP 2
BILGE PUMP ON-OFF-AUTO
BOW LIGHT
CABIN
CB RADIO
CELLULAR PHONE
CHART LIGHT
CHART PLOTTER
COCKPIT LIGHTS
COMPASS LIGHT
COURTESY LIGHTS
DAVIT
DC OUTLETS
DC SUB PANEL
DECK LIGHTS
DOCKING LIGHTS
DOWN RIGGER
ELECTRIC HATCH
ENGINE ROOM BLOWER
ENGINE ROOM LIGHTS
FAN
FISH FINDER
FISHING LIGHT
FISHWELL PUMP

4207 and 8039

(BLANK)
12 VOLT DC
12 VOLT DC OUTLETS
AFT CABIN
AFT HEAD
ALARM SYSTEM
ANCHOR WASH DOWN
BAIT PUMP
BILGE ALARM
BILGE PUMP 2
BRIDGE INSTRUMENTS
CABIN 2 LIGHTS
CABIN 3 LIGHTS
CABIN 4 LIGHTS
CABIN FANS
CABIN LIGHTS
CB RADIO
CELLULAR PHONE
CHART LIGHT
CHART PLOTTER
COCKPIT LIGHTS
COLOR SOUNDER
COMM ELECTRONICS
DC LIGHTS
DC MAIN
DC OUTLETS
DC REFRIGERATOR
DC SUB PANEL
DECK LIGHTS
DECK LIGHTS AFT

DECK LIGHTS FWD
DEPTH RECORDER
DEPTH/SPEED
DESALINATOR
DIMMER
DINING AREA LIGHTS
DOCKING LIGHTS
EMERGENCY LIGHTS
ENGINE ROOM BILGE ALARM
ENGINE ROOM LIGHTS
ENGINE ROOM PANEL MAIN
ENGINE ALARM
EXTERIOR LIGHTS
FAN 2
FIRE ALARM
FISHING LIGHT
FLOOD LIGHTS
FLYBRIDGE ELECTRONICS
FLYBRIDGE LIGHTS
FRESH WATER PUMP
FRESH WATER WASH DOWN
GALLEY LIGHTS
GPS/PLOTTER
HAILER
HAM RADIO
HEAD
HEAD LIGHTS
HEAD LIGHTS 2
HEATER 2
HELM ELECTRONICS

HELM GAUGES
HELM INSTRUMENTS
HIGH WATER ALARM
HOLDING TANK
HOLDING TANK ALARM
HOLDING TANK PUMP
INSTRUMENT LIGHTS
INSTRUMENTS
INTERCOM
INTERIOR LIGHTS
LIGHTS 2
LIVEWELL
LOG
LORAN
MAIN CABIN
MAP LIGHT
MAST LIGHTS
NAV STATION ELECTRONICS
NAV STATION GAUGES
NAV STATION INSTRUMENTS
NAV STATION LIGHTS
NAVIGATION ELECTRONICS
NAVIGATION INSTRUMENTS
NAVIGATION LIGHTS
RACK LIGHTS
RADIO
SALOON
SALOON LIGHTS
SAT/COM
SAT/NAV

SATELLITE DISH
SEARCHLIGHT
SEAWATER TEMP
SEAWATER WASH DOWN
SECURITY SYSTEM
SHOWER SUMP PUMP
SONAR
SPEED/LOG
SSB
SUB PANEL
SUMP PUMP
TELEPHONE SYSTEM
TRACK LIGHTS
TRANSFER PUMP
TRIM TABS
TV
TV/VCR
UTILITY
VIDEO PLOTTER
WATER ALARM
WATER MAKER
WATER PUMP
WEATHER FAX
WEATHER INSTRUMENT
WINCHES
WIND INSTRUMENTS
WINDEX LIGHT
WIPER PORT
WIPER STBD
WIPERS

4205 and 8030

ACCESSORY
ANCHOR LIGHT
AUTOPILOT
BILGE PUMP
BLOWER
COMPASS LIGHT
DEPTH SOUNDER
ELECTRONICS
ENGINE INSTRUMENTS
FAN
FOREDECK LIGHT
FWD CABIN LIGHTS
GPS
HORN
KNOTMETER
LIGHTS
MACERATOR PUMP
MAIN CABIN LIGHTS
RADAR
REFRIGERATOR
RUNNING LIGHTS
SAILING INSTRUMENTS
SPARE
SPREADER LIGHTS
STEAMING LIGHT
STEREO
STROBE LIGHT
TRICOLOR LIGHT
VHF
WATER PRESSURE

4208 and 8067

(BLANK)
120 VOLT AC OUTLETS
120 VOLTS AC / 60 HZ
AC COMPRESSOR
AC FAN
AC MAIN
AC PANEL
AC POWER
AC REFRIGERATOR
AC SUB PANEL
AFT CABIN
AFT HEAD
AIR CONDITIONER 3
AIR CONDITIONER 4
ALARM SYSTEM
AMPLIFIER
AUDIO/VIDEO SYSTEM
BATTERY CHARGER 2
BRIDGE LIGHTS
BRIDGE OUTLETS
CABIN
CABIN 2
CABIN 2 LIGHTS
CABIN 2 OUTLETS
CABIN 3
CABIN 3 LIGHTS
CABIN 3 OUTLETS
CABIN 4
CABIN 4 LIGHTS
CABIN 4 OUTLETS

CABIN HEATER
CABIN LIGHTS
CHARGER/INVERTER
COCKPIT LIGHTS
COCKPIT REFRIGERATOR
COMPARTMENT LIGHT
COOKTOP
DECK LIGHTS
DIMMER
DINING AREA LIGHTS
DINING AREA OUTLETS
DISHWASHER
DISPOSAL
DRYER
EMERGENCY LIGHTS
ENGINE ROOM LIGHTS
ENGINE ROOM OUTLETS
EXHAUST FAN
EXTERIOR LIGHTS
FAN
FAN 2
FAN 3
FAN 4
FLOOD LIGHTS
FREEZER
FURNACE
GALLEY APPLIANCES
GALLEY LIGHTS
GARBAGE DISPOSAL
GENERATOR 1

GFI OUTLET
HALLWAY LIGHTS
HEAD 2 OUTLETS
HEAD 3 OUTLETS
HEAD 4 OUTLETS
HEAD LIGHTS
HEAD LIGHTS 2
HEAD LIGHTS 3
HEAD LIGHTS 4
HEAD OUTLETS
HEADLIGHTS
HEATER 2
HEATER 3
HEATER 4
HOOD FAN
ICEMAKER
INTERIOR LIGHTS
INVERTER OUTLET
ISOLATION TRANSFORMER
LAZARETTE LIGHTS
LECTRASAN
LIGHTS 2
LIGHTS 3
LIGHTS 4
LIGHTS AFT
LIGHTS FWD
MAIN
MAIN BREAKER
MAIN CABIN
NAV STATION LIGHTS

OUTLETS 2
OUTLETS 3
OUTLETS 4
OUTLETS DECK
OUTLETS EXTERIOR
OUTLETS INTERIOR
RACK OUTLETS
RANGE
REFRIGERATOR/FREEZER
REVERSE POLARITY
SALOON
SALOON HEATER
SALOON LIGHTS
SALOON OUTLETS
SATELLITE DISH
SHIP
SHORE
SHORE POWER
STEREO
STOVE/MICROWAVE
SUB PANEL
TELEPHONE SYSTEM
TRACK LIGHTS
TRASH COMPACTOR
TV
UPS SYSTEM
VACUUM
VIDEO SYSTEM
WASHER
WATER MAKER

Label set included with Source Selection Panels (not sold separately)

TRANSFER
INVERTER
SHORE
SHORE 1
SHORE 2
AC BUS 1
AC BUS 2
GENERATOR
GENERATOR 1
GENERATOR 2

Example:

Square Format
6520-0044

BAIT
PUMP

Large Format
8063-0356

REFRIGERATOR

Label PN	Label Text	Label PN	Label Text	Label PN	Label Text	Label PN	Label Text
0251	HEAD LIGHTS	0311	MAIN CABIN	0367	SALOON LIGHTS	0429	VACUUM
0252	HEAD LIGHTS 2	0312	MAIN CABIN LIGHTS	0368	SALOON OUTLETS	0430	VACUUM PUMP
0253	HEAD LIGHTS 3	0313	MAIN CABIN OUTLETS	0369	SALT WATER PUMP	0431	VCR
0254	HEAD LIGHTS 4	0314	MAIN SAIL FURLING	0370	SAT/COM	0432	VHF
0255	HEAD OUTLETS	0315	MAP LIGHT	0371	SAT/NAV	0511	VHF 1
0256	HEADLIGHTS	0572	MARINE SANITATION DEVICE	0372	SATELLITE DISH	0512	VHF 2
0257	HEATER	0316	MAST LIGHTS	0373	SCRUBBER	0433	VIDEO PLOTTER
0519	HEATER & AIR CONDITIONER	0317	MASTHEAD LIGHT	0374	SEARCHLIGHT	0434	VIDEO SYSTEM
0258	HEATER 2	0551	MEMORY	0375	SEARCHLIGHT HAND HELD	0543	WASHDOWN
0259	HEATER 3	0574	MERCATHODE	0376	SEARCHLIGHT REMOTE	0513	WASHDOWN PUMP
0260	HEATER 4	0318	MICROWAVE	0377	SEAWATER TEMP	0435	WASHER
0261	HELM ELECTRONICS	0319	MINI DISC PLAYER	0378	SEAWATER WASH DOWN	0436	WASHER/DRYER
0262	HELM GAUGES	0320	MIZZEN FLOOD	0379	SECURITY SYSTEM	0437	WATER ALARM
0263	HELM INSTRUMENTS	0456	NAV LIGHT ANCHOR OFF NAV	0380	SHIP	0562	WATER GAUGE
0264	HIGH WATER ALARM	0321	NAV STATION ELECTRONICS	0381	SHORE	0438	WATER HEATER
0265	HOLDING TANK	0322	NAV STATION GAUGES	0463	SHORE 1	0439	WATER LEVEL
0266	HOLDING TANK ALARM	0323	NAV STATION INSTRUMENTS	0464	SHORE 2	0440	WATER MAKER
0267	HOLDING TANK PUMP	0324	NAV STATION LIGHTS	0382	SHORE CORD REEL	0441	WATER PRESSURE
0268	HOOD FAN	0325	NAVIGATION ELECTRONICS	0383	SHORE POWER	0442	WATER PUMP
0269	HOOD LIGHT	0326	NAVIGATION INSTRUMENTS	0384	SHORE POWER CORD	0443	WEATHER FAX
0270	HORN	0327	NAVIGATION LIGHTS	0385	SHOWER SUMP PUMP	0444	WEATHER INSTRUMENT
0475	HOT TUB	0565	NETWORK	0386	SINK DRAIN	0571	WIFI
0271	HOT WATER PUMP	0328	NIGHT LIGHTS	0486	SLIDEOUT	0553	WINCH
0548	HOUSE	0329	OFF	0387	SOLAR PANEL	0445	WINCHES
0549	HOUSE/ENG	0331	OIL CHANGE PUMP	0388	SONAR	0477	WIND GENERATOR
0550	HOUSE/GEN	0563	OIL GAUGE	0542	SONAR/ACC	0446	WIND INSTRUMENTS
0272	HYDRAULIC ALARM	0332	ON	0389	SPARE	0522	WIND SHIELD VENT
0273	HYDRAULIC SYSTEM	0330	ON-OFF	0390	SPEED/LOG	0447	WINDMILL LIGHT
0274	HYDRAULIC TANK ALARM	0333	OUTLETS	0391	SPREADER LIGHTS	0448	WINDLASS
0570	HYDRAULIC VALVE	0334	OUTLETS 2	0392	SPREADER LT MIZZEN	0449	WINDSHIELD WASHER
0275	ICE MAKER	0335	OUTLETS 3	0393	SSB	0472	WIPER CENTER
0276	IGNITION	0336	OUTLETS 4	0394	STABILIZER	0450	WIPER PORT
0277	IGNITION PORT	0505	OUTLETS AFT	0558	STAIR LIGHT	0451	WIPER STBD
0278	IGNITION STBD	0337	OUTLETS DECK	0395	STARBOARD	0452	WIPERS
0279	INSTRUMENT LIGHTS	0506	OUTLETS ENGINE ROOM	0396	START	0557	WIRELESS
0280	INSTRUMENTS	0338	OUTLETS EXTERIOR	0398	START PORT		
0281	INTERCOM	0503	OUTLETS FORWARD	0399	START STBD		
0282	INTERCOM HAILER	0339	OUTLETS INTERIOR	0397	START-STOP		
0283	INTERCOM/TELEPHONE	0504	OUTLETS PILOT HOUSE	0541	STBD FISHBOX		
0284	INTERIOR LIGHTS	0458	PANEL LIGHTS	0533	STBD LIVEWELL		
0556	INTERNET	0496	PILOT HOUSE FAN	0400	STBD THRUSTER		
0285	INVERTER	0340	PORT	0401	STEAMING LIGHT		
0467	INVERTER 2	0540	PORT FISHBOX	0569	STEERING VALVE		
0476	INVERTER AC BUS	0534	PORT LIVEWELL	0402	STEP LIGHT		
0471	INVERTER AC SUPPLY	0341	PORT THRUSTER	0403	STEREO		
0470	INVERTER DC SUPPLY	0552	PORT/STBD ENG	0577	STEREO MEMORY		
0286	INVERTER OUTLET	0342	POWER	0404	STERN LIGHT		
0287	ISOLATION TRANSFORMER	0343	POWER WASHER	0509	STERN THRUSTER		
0479	KITCHEN	0457	PRE-HEAT	0405	STOP		
0484	KITCHEN SLIDEOUT	0344	PRIMARY WINCHES	0406	STOVE		
0288	KNOTMETER	0345	PRINTER	0407	STOVE/MICROWAVE		
0289	LAZARETTE LIGHTS	0346	PUMP	0408	STROBE LIGHT		
0290	LECTRASAN	0497	PUMP BLACK WATER	0409	SUB PANEL		
0291	LIGHTER	0498	PUMP GRAY WATER	0410	SUMP PUMP		
0292	LIGHTS	0554	PUMPOUT	0411	SUMP PUMP 2		
0293	LIGHTS 2	0347	RACK LIGHTS	0412	SYNCHRO		
0294	LIGHTS 3	0348	RACK OUTLETS	0564	TANK GAUGE		
0295	LIGHTS 4	0349	RADAR	0413	TAPE DECK		
0296	LIGHTS AFT	0350	RADAR ARCH LIGHTS	0414	TELEPHONE SYSTEM		
0494	LIGHTS AFT CABIN	0351	RADIO	0415	TEST		
0297	LIGHTS FWD	0352	RANGE	0416	TOWING LIGHTS		
0493	LIGHTS MASTER CABIN	0579	RCBO	0417	TRACK LIGHTS		
0495	LIGHTS PANTRY	0353	RDF	0465	TRANSFER		
0492	LIGHTS PILOTHOUSE	0483	REAR SLIDEOUT	0418	TRANSFER PUMP		
0298	LIGHTS PORT	0354	RECEIVER	0419	TRANSFORMER		
0491	LIGHTS SETTEE	0355	RECEPTACLE	0518	TRANSFORMER SECONDARY		
0299	LIGHTS STBD	0356	REFRIGERATOR	0420	TRASH COMPACTOR		
0300	LIVEWELL	0357	REFRIGERATOR PUMP	0478	TRAVEL LOCKS		
0301	LIVEWELL INPUT	0358	REFRIGERATOR/FREEZER	0421	TRICOLOR LIGHT		
0302	LIVEWELL OUTPUT	0359	REGULATOR	0422	TRIM TABS		
0303	LOCKER LIGHTS	0360	REVERSE POLARITY	0527	TROLLING MOTOR		
0304	LOG	0361	ROD LOCKER	0423	TV		
0305	LORAN	0489	RUDDER ANGLE INDICATOR	0424	TV ANTENNA		
0306	LPG CONTROL	0362	RUNNING LIGHTS	0425	TV/STEREO		
0307	LUBE OIL PUMP	0363	SAILING CONTROLS	0426	TV/VCR		
0308	MACERATOR PUMP	0364	SAILING INSTRUMENTS	0535	UNDERWATER LIGHT		
0309	MAIN	0365	SALOON	0427	UPS SYSTEM		
0310	MAIN BREAKER	0366	SALOON HEATER	0428	UTILITY		

Individual Square and Large Format Panel Labels

To order individual labels, please indicate the Part No. (6520 or 8063) and the Label No.

Label PN	Label Text	Label PN	Label Text	Label PN	Label Text	Label PN	Label Text
0001	LABEL #1	0485	BEDROOM SLIDEOUT	0125	DECK LIGHTS AFT	0189	FISHING LIGHT
0002	LABEL #2	0055	BILGE	0126	DECK LIGHTS FWD	0487	FISHWELL PUMP
0003	(BLANK)	0056	BILGE ALARM	0127	DECK LIGHTS PORT	0488	FISHWELL PUMP 2
0005	12 VOLT DC	0057	BILGE ALARM 2	0128	DECK LIGHTS STBD	0576	FLOAT SWITCH
0004	12 VOLT DC OUTLETS	0058	BILGE ALARM 3	0129	DEFROSTER	0190	FLOOD LIGHTS
0499	12 VOLT OUTLETS INSIDE	0059	BILGE ALARM 4	0130	DEPTH RECORDER	0191	FLOSCAN
0500	12 VOLT OUTLETS OUTSIDE	0060	BILGE LIGHTS	0131	DEPTH SOUNDER	0192	FLYBRIDGE
0502	120 VOLT / 60 HZ SHORE POWER	0061	BILGE PUMP	0132	DEPTH/SPEED	0193	FLYBRIDGE ELECTRONICS
0007	120 VOLT AC / 60 HZ	0062	BILGE PUMP 2	0133	DESALINATOR	0194	FLYBRIDGE LIGHTS
0006	120 VOLT AC OUTLETS	0063	BILGE PUMP 3	0134	DIMMER	0195	FLYBRIDGE OUTLETS
0516	120/240V 60 HZ	0064	BILGE PUMP 4	0135	DINING AREA LIGHTS	0196	FOG LIGHTS
0517	120/240V 60 HZ SHORE POWER	0453	BILGE PUMP ON-OFF-AUTO	0136	DINING AREA OUTLETS	0197	FOREDECK LIGHT
0526	230 VOLTS AC 50 HZ	0559	BLANK WHITE WRITABLE	0137	DISCHARGE PUMP	0539	FORWARD BILGE
0010	24 VOLT DC	0065	BLOWER	0567	DISCHARGE PUMP 2	0198	FREEZER
0009	24 VOLT DC OUTLET	0066	BOAT DAVIT	0568	DISCHARGE PUMP 3	0199	FRESH WATER
0008	240 VOLTS AC	0067	BOOM LIGHT	0138	DISHWASHER	0200	FRESH WATER PUMP
0460	240 VOLTS AC / 60 HZ	0068	BOW LIGHT	0139	DISPOSAL	0201	FRESH WATER PUMP 2
0515	250 VOLT 50HZ SHORE POWER	0069	BOW THRUSTER	0140	DIVE COMPRESSOR	0202	FRESH WATER PUMP 3
0468	250 VOLTS AC / 50 HZ	0070	BRIDGE	0141	DOCKING LIGHT PORT	0203	FRESH WATER PUMP 4
0462	AC BUS 1	0071	BRIDGE INSTRUMENTS	0142	DOCKING LIGHT STBD	0204	FRESH WATER WASH DOWN
0011	AC COMPRESSOR	0072	BRIDGE LIGHTS	0143	DOCKING LIGHTS	0482	FRONT SLIDEOUT
0012	AC FAN	0073	BRIDGE OUTLETS	0144	DOWN RIGGER	0561	FUEL GAUGE
0013	AC MAIN	0074	CABIN	0145	DRYER	0205	FUEL PRIMER PUMP
0014	AC PANEL	0075	CABIN 2	0146	DUMP VALVES	0206	FUEL PUMP
0015	AC POWER	0501	CABIN 2 FAN	0566	ECU	0207	FUEL PUMP 2
0016	AC REFRIGERATOR	0076	CABIN 2 LIGHTS	0580	ELCI	0208	FUEL PUMP 3
0017	AC SUB PANEL	0077	CABIN 2 OUTLETS	0147	ELECTRIC HATCH	0209	FUEL PUMP 4
0532	ACCENT LIGHT	0078	CABIN 3	0469	ELECTRONIC CONTROL UNIT	0210	FUEL TANK HEATER
0018	ACCESSORY	0079	CABIN 3 LIGHTS	0148	ELECTRONICS	0211	FUEL TRANSFER
0019	ADF	0080	CABIN 3 OUTLETS	0149	EMERGENCY BACKUP SYS	0507	FUME DETECTOR
0020	AERATOR	0081	CABIN 4	0150	EMERGENCY LIGHTS	0212	FURLER JIB
0021	AFT CABIN	0082	CABIN 4 LIGHTS	0151	EMERGENCY PUMPS	0213	FURLER MAINSAIL
0022	AFT CABIN LIGHTS	0083	CABIN 4 OUTLETS	0545	ENGINE	0214	FURLER SPINNAKER
0023	AFT CABIN OUTLETS	0084	CABIN FAN	0581	ENGINE 1	0215	FURNACE
0536	AFT CABIN SUMP	0085	CABIN HEATER	0582	ENGINE 2	0216	FWD CABIN
0530	AFT DISCHARGE PUMP	0086	CABIN LIGHTS	0547	ENG 1/ENG 2	0217	FWD CABIN LIGHTS
0024	AFT HEAD	0087	CABIN OUTLETS	0158	ENGINE ALARM	0218	FWD CABIN OUTLETS
0025	AIR COMPRESSOR	0088	CABLEMASTER	0159	ENGINE BLOCK HEATER	0529	FWD DISCHARGE PUMP
0026	AIR CONDITIONER	0089	CASSETTE PLAYER	0160	ENGINE CONTROL PORT	0528	FWD HEAD
0027	AIR CONDITIONER 2	0090	CB RADIO	0161	ENGINE CONTROL STBD	0219	GALLEY
0028	AIR CONDITIONER 3	0091	CCTV	0162	ENGINE CONTROLS	0220	GALLEY APPLIANCES
0029	AIR CONDITIONER 4	0092	CD PLAYER	0163	ENGINE DRIVEN REFRIG	0221	GALLEY DRAIN
0030	AIR CONDITIONER PUMP	0093	CELLULAR PHONE	0164	ENGINE EXHAUST FAN	0222	GALLEY FAN
0031	AIR HORN	0537	CENTER LIVEWELL	0165	ENGINE HATCH	0223	GALLEY LIGHTS
0573	AIS	0094	CHARGER/INVERTER	0166	ENGINE HEATER PORT	0224	GALLEY OUTLETS
0544	ALARM	0095	CHART LIGHT	0167	ENGINE HEATER STBD	0490	GALVANIC ISOLATOR
0032	ALARM SYSTEM	0096	CHART PLOTTER	0168	ENGINE INSTRUMENTS	0225	GARBAGE DISPOSAL
0461	ALTERNATOR	0097	CHOKE	0169	ENGINE OIL PAN PUMP	0226	GAS ALARM
0033	ALTERNATOR DISCONNECT	0098	CIRCULATOR PUMP	0152	ENGINE ROOM BILGE ALARM	0227	GENERAL PURPOSE
0034	AMPLIFIER	0508	CLOCK	0153	ENGINE ROOM BLOWER	0523	GENERATOR
0035	ANCHOR LIGHT	0099	CLOSET LIGHT	0154	ENGINE ROOM HEATER	0228	GENERATOR 1
0036	ANCHOR LIGHT MAIN	0575	CO DETECTOR	0155	ENGINE ROOM LIGHTS	0229	GENERATOR 2
0037	ANCHOR LIGHT MIZZEN	0100	COCKPIT LIGHTS	0156	ENGINE ROOM OUTLETS	0454	GENERATOR OFF ON START
0038	ANCHOR WASH DOWN	0101	COCKPIT REFRIG	0157	ENGINE ROOM PANEL MAIN	0230	GENERATOR ROOM BLOWER
0039	APPLIANCES	0102	COLOR SOUNDER	0170	ENGINE SHUTDOWN	0466	GENERATOR RUNNING
0040	ARCH LIGHTS	0103	COMM ELECTRONICS	0171	ENGINE TEMP	0455	GENERATOR STOP
0041	AUDIO/VIDEO SYSTEM	0104	COMPARTMENT HEATER	0546	ENGINES	0578	GFCI
0525	AUTO FILL	0105	COMPARTMENT LIGHT	0172	ENTERTAINMENT CENTER	0231	GFI OUTLET
0042	AUTO/MAN	0106	COMPASS LIGHT	0173	ENTRANCE DOOR	0232	GPS
0555	AUTO/MAN	0107	COMPUTER	0174	ENTRY STEP	0233	GPS/LORAN
0524	AUTOMATIC CHARGING RELAY	0514	COMPUTER DISPLAY	0175	EXHAUST FAN	0234	GPS/PLOTTER
0043	AUTOPILOT	0108	CONDENSER PUMP	0176	EXHAUST TEMP	0510	GUN LOCKS
0044	BAIT PUMP	0109	CONSOLE LIGHT	0177	EXTERIOR	0235	GYRO COMPASS
0045	BAITWELL	0110	CONVERTER	0178	EXTERIOR LIGHTS	0236	HAILER
0046	BALLAST CONTROLS	0111	COOKING GRILL	0179	FAN	0237	HALLWAY LIGHTS
0047	BALLAST PUMP	0112	COOKTOP	0180	FAN 2	0238	HALON FIRE SYSTEM
0048	BAR	0113	COOLING PUMP	0181	FAN 3	0239	HAM RADIO
0481	BATHROOM	0114	COURTESY LIGHTS	0182	FAN 4	0240	HEAD
0049	BATTERY	0115	CREW LIGHTS	0183	FAX	0241	HEAD 2
0473	BATTERY 1	0116	CREW QUARTERS	0184	FILLING PUMP	0242	HEAD 2 FAN
0474	BATTERY 2	0117	DAVIT	0185	FIRE ALARM	0243	HEAD 2 OUTLETS
0050	BATTERY CHARGER	0118	DC LIGHTS	0186	FIRE EXT	0244	HEAD 3
0051	BATTERY CHARGER 2	0119	DC MAIN	0187	FIRE HORN	0245	HEAD 3 FAN
0052	BATTERY COMPARTMENT	0120	DC OUTLETS	0459	FISH FINDER	0246	HEAD 3 OUTLETS
0053	BATTERY PARALLEL	0121	DC REFRIGERATOR	0538	FISHBOX DRAIN	0247	HEAD 4
0560	BATTERY SWITCH	0122	DC SUB PANEL	0188	FISHBOX ICEMAKER	0248	HEAD 4 FAN
0054	BEACON	0123	DECK	0520	FISHBOX PUMP	0249	HEAD 4 OUTLETS
0480	BEDROOM	0124	DECK LIGHTS	0521	FISHBOX REFRIGERATOR	0250	HEAD FAN

Protect Your Boat

with the correct size wire and fuse



Scan to download
the app or go to
www.circuitwizard.blueseasea.com

STEP 1 Choose the Correct Wire

A Locate the **CURRENT FLOW IN AMPS** of your circuit along the top of the **WIRE SELECTION CHART**.

B Select the **CIRCUIT TYPE**.

- Non-critical circuits with 10% allowable voltage drop include: general lighting, windlasses, bait pumps, general appliances
- Critical circuits with 3% allowable voltage drop include: panel main feeders, bilge blowers, electronics, navigation lights

C Find the **CIRCUIT LENGTH** along the left side of the **WIRE SELECTION CHART**.

- The circuit length is the length of the negative wire added to the length of the positive wire.
- Calculations are based on 105°C wire. For wire rated at 90°C or lower, or for wire that passes through an engine room, the first row of the chart, in gray, does not apply.

D Intersect the **CURRENT FLOW IN AMPS** with **CIRCUIT LENGTH** to identify the correct wire size.

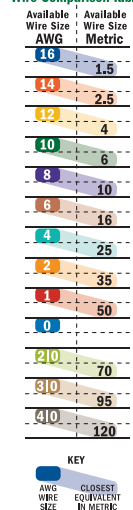
Example: A windlass rated 80A is 25 ft. from the battery. The circuit length is the total length of the positive and negative wire added together, which in this example is 50 ft. The circuit type is 'non-critical', and the correct wire size is 4 AWG.

WIRE SELECTION CHART

Calculations are based on 105°C wire.

For more detailed calculations, consult the Circuit Wizard at www.circuitwizard.blueseasea.com

Standard and Metric Wire Comparison Table



CIRCUIT TYPE		CURRENT FLOW IN AMPS															
Non-Critical 10% VOLTAGE DROP	Critical 3% VOLTAGE DROP	5A	10A	15A	20A	25A	30A	40A	50A	60A	70A	80A	90A	100A	120A	150A	200A
0 to 20 ft	0 to 6 ft	16 AWG	16 AWG	14 AWG	14 AWG	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	1 AWG	2/0 AWG
30 ft	10 ft	16 AWG	14 AWG	12 AWG	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	2/0 AWG
50 ft	15 ft	12 AWG	10 AWG	10 AWG	8 AWG	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	0 AWG	2/0 AWG
65 ft	20 ft	14 AWG	10 AWG	8 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	0 AWG	2/0 AWG
80 ft	25 ft	12 AWG	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	3/0 AWG	3/0 AWG
100 ft	30 ft	10 AWG	8 AWG	6 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG
130 ft	40 ft	8 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	2/0 AWG	2/0 AWG	2/0 AWG	4/0 AWG	4/0 AWG
165 ft	50 ft	10 AWG	6 AWG	4 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	3/0 AWG	3/0 AWG	3/0 AWG	4/0 AWG	4/0 AWG
200 ft	60 ft	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	70 ft	8 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	80 ft	8 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	90 ft	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	100 ft	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	110 ft	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	120 ft	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG
	130 ft	6 AWG	4 AWG	2 AWG	2 AWG	1 AWG	1 AWG	0 AWG	0 AWG	0 AWG	0 AWG	0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG	4/0 AWG

AWG WIRE SIZE CHART



Although this process uses information from ABYC E-11 to recommend wire size and circuit protection, it may not cover all of the unique characteristics that may exist on a boat. If you have specific questions about your installation please consult an ABYC certified installer.

STEP 2 Choose the Correct Fuse and Fuse Amperage

A Choose a fuse from the list on the top of the FUSE SELECTION CHART by following along the line of the AWG WIRE SIZE determined from Step 1. Appropriate fuse amperage will have a gray bar that intersects the line.

B The appropriate fuse amperage will be found in one of the four gray bars below the selected fuse type.

Single Wire, Outside Engine Room = First column dark gray bar

Single Wire, Inside Engine Room = First column light gray bar

Bundled Wire, Outside Engine Room = Second column dark gray bar

Bundled Wire, Inside Engine Room = Second column light gray bar

Calculations are based on 105°C wire. For wire rated at 80°C or lower, use the fuse amperage for the next smaller wire size.

Example: For a 4 AWG single 105°C rated wire outside an engine room, the fuse amperage is 150A

Note: The procedure above calculates the maximum fuse amperage which reduces nuisance blows but may offer less protection than a lower amperage fuse. The minimum fuse amperage is calculated by multiplying the current flow in amps by 125%. If the product instructions specify a fuse amperage, use that value if it is under the maximum amperage found in the above procedure. If the specified fuse amperage is over the maximum suggested, move down the column and choose the wire size that intersects with the specified fuse amperage.

FUSE SELECTION CHART

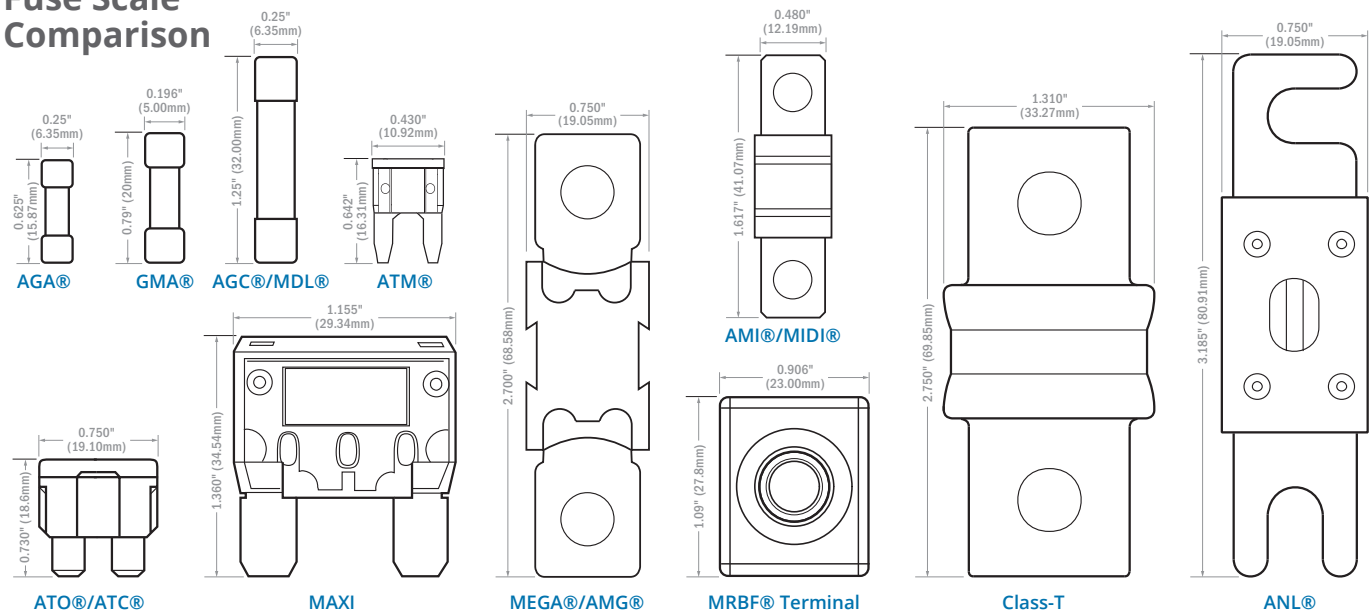
Calculations are based on 105°C wire.

For lower temperature rated wire, consult the Circuit Wizard at www.circuitwizard.bluesea.com

LEGEND	AGC® MDL®		ATO® or ATC® Fuse		MAXI™ Fuse		AMI® or MIDI® Fuse		MRBF TERMINAL Fuse		MEGA® or AMG® Fuse		CLASS T Fuse		ANL® Fuse	
	.25A to 30A		1A to 30A		30A to 80A		30A to 200A		30A to 300A		100A to 300A		225A to 400A		35A to 400A	
	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES	SINGLE WIRE	BUNDLED WIRES
AWG WIRE SIZE	16 AWG	25A-20A	20A-15A	25A-20A	20A-15A	25A-20A	20A-15A	25A-20A	20A-15A	25A-20A	20A-15A	25A-20A	20A-15A	25A-20A	20A-15A	25A-20A
	14 AWG	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A
	12 AWG	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A	25A-20A	30A-25A
	10 AWG															
	8 AWG															
	6 AWG															
	4 AWG															
	2 AWG															
	1 AWG															
	0 AWG															
	2/0 AWG															
	3/0 AWG															
	4/0 AWG															

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Fuse Scale Comparison



STEP 3 Choose the Fuse Holder

A Using the same colored headings as in the FUSE SELECTION CHART (step 2), follow the columns down to find fuse holders or fuse blocks that meet your specific requirements.

B Consider environmental factors:

- Ignition protection is required where flammable vapors may accumulate.

Example: Engine room and propane locker

Consult American Boat and Yacht Council (ABYC) E-11.5.3 for Ignition Protection























- Ingress protection protects fuses from spray, washdown, and humidity.

IP66-protected against powerful water jets

C Decide between an in-line fuse holder or a fuse block:

- In-line fuse holders are compact and hold a single low-amperage fuse.
- Fuse blocks mount to a solid surface and may hold a single fuse or multiple fuses.

FUSE HOLDER SELECTION CHART

MDL® AGC®	ATO® or ATC® Fuse	MAXI® Fuse	AMI® or MIDI® Fuse	MRBF TERMINAL Fuse	MEGA® or AMG® Fuse	CLASS T Fuse	ANL® Fuse
Crimpable In-Line Fuse Holder  5060	ATO® or ATC® In-Line Fuse Holders  5064 5065	MAXI® In-Line Fuse Holder  5068	AMI® or MIDI® Safety Fuse Block  7720	Terminal MRBF Fuse Blocks  5191	MEGA® or AMG® Fuse Block  5001	CLASS T Fuse Block  5502	ANL® Fuse Blocks  5005
Waterproof In-Line Fuse Holders  5061	ST Blade Fuse Blocks Battery Terminal Mount  5023	MAXI® Fuse Block  5006	SafetyHub Fuse Block  7748	 2151	MEGA® or AMG® Safety Fuse Block  7721		 5503
Heavy Duty In-Line Fuse Holder  5062	Compact Fuse Block  5045		 7725				
ST Glass Fuse Blocks  5015 5018	Split Bus  5032 Common Sourced 5025 5026 5028 5029 Independent Sourced 5035						
	SafetyHub Fuse Block  7748  7725						

LEGEND

- Ingress protection
- Ignition protection

Although this process uses information from ABYC E-11 to recommend wire size and circuit protection, it may not cover all of the unique characteristics that may exist on a boat. If you have specific questions about your installation please consult an ABYC certified installer.

Marketing Materials

Blue Sea Systems offers sales and marketing materials that assist in the merchandising, promotion, and selection of products. For updated information and new marketing and sales materials, visit bluesea.com/marketing.

2016 Catalog



- 20016
- 152 pages
 - 24 catalogs per case
 - Order individually

You Can Do It Guides

- 20 guides per pack



20005

PN	Description
20005	Design and Order a Custom Panel
20008	Protect Your Boat
20009	Add-A-Battery
20024	Install an ELCI Breaker

Logo Signs

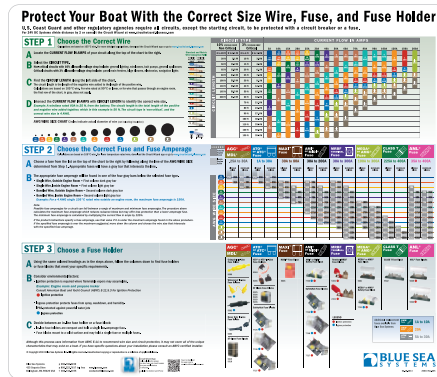


20006
24" x 7"



20036
11.5" x 4"

Wire, Fuse and Fuse Holder Selection Chart



20010
20" x 17" Deskmat

Merchandising Plans



8343060



8341060

PN	Merchandising Plan Description
8341050	AGC® Fuse and Fuse Block
8341060	ATO®/ATC® Fuse and Fuse Block
8341061	easyID™ ATC® Fuse and Fuse Block
8341070	AMI®/MIDI® Fuse and Fuse Block
8346050	12V DC Accessories
8343050	M Series Battery Management
8343060	e Series Battery Management

Window Decal



9804
9" x 2.25"

Back Tags



9914

Brushed Cotton Hats

- Adjustable strap
- One size fits all



20004

20003

PN	Color
20004	Stone
20003	Navy Blue

Battery Management Wiring Schematics for Typical Applications

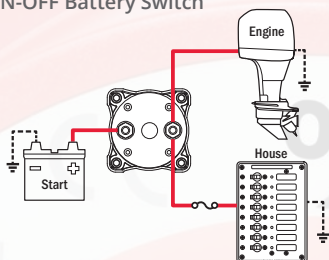
Batteries are at the heart of the electrical system found on any boat or vehicle. Proper battery management, including switching and charging, is essential for safe and reliable operation. The following wiring diagrams show how batteries, battery switches, and Automatic Charging Relays are wired together from a simple 1 battery - 1 engine configuration to a 4 battery - 2 engine - 1 generator system. For more detailed wiring guidelines please consult a qualified marine electrician or one of the many books available on the subject.

Note: The ACRs pictured are representative of any ACR. The battery switches are representative of any Battery Switch of the same model.

1 Battery - 1 Engine

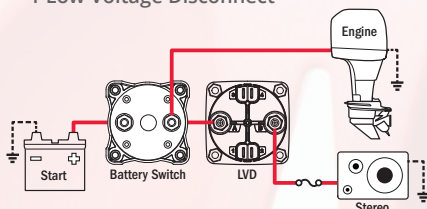
Switches a single battery to a single load group.

ON-OFF Battery Switch



Saves battery power for starting.

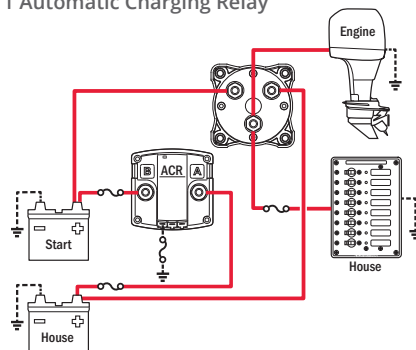
1 ON-OFF Battery Switch
1 Low Voltage Disconnect



2 Battery - 1 Engine

Switches isolated battery banks to all loads or combines battery banks to all loads.

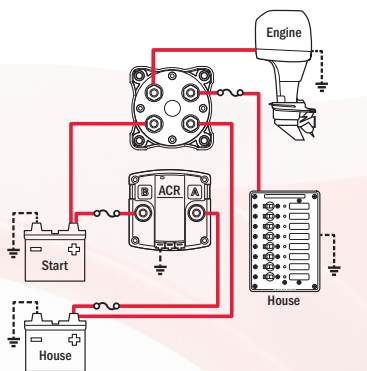
1 Selector Battery Switch
1 Automatic Charging Relay



Note:
Uses same style batteries

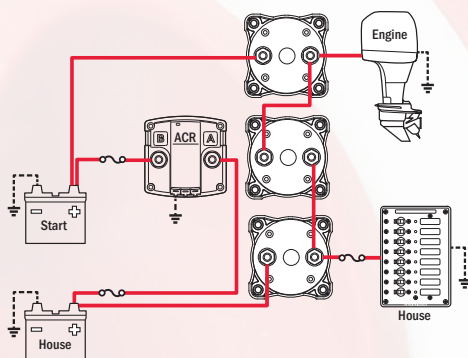
Simultaneously switches two isolated batterybanks or combines battery banks to all loads.

1 Dual Circuit Plus™ Battery Switch
1 Automatic Charging Relay



Can isolate a failed battery.

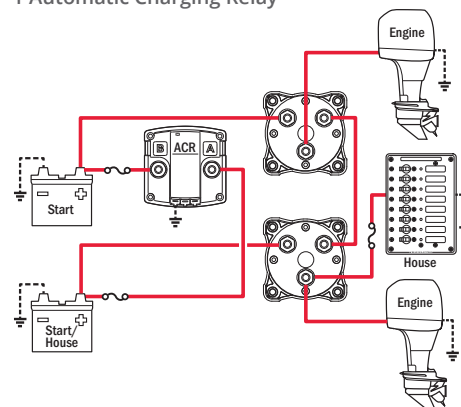
3 ON-OFF Battery Switches
1 Automatic Charging Relay



2 Battery - 2 Engine

House battery is shared with one engine. One engine battery is in reserve.

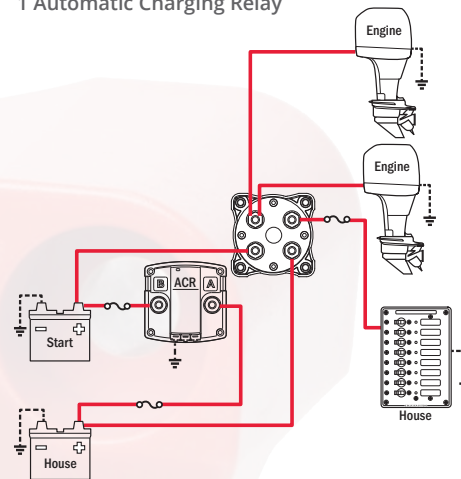
2 Selector Battery Switches
1 Automatic Charging Relay



Normal - Set all switches to position 1
Parallel - Set all switches to position 1+2
Isolate - Set Load switch to Position 2 and Source Switch to position 1+2

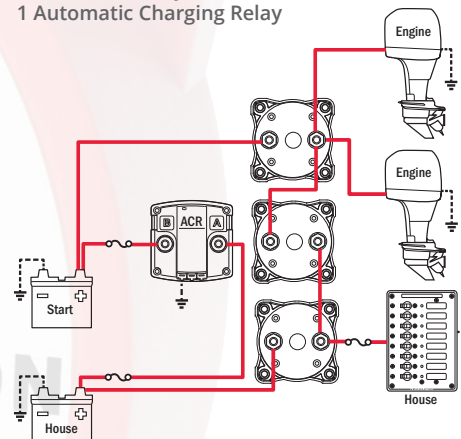
Engines share one battery. House battery is in reserve.

1 Dual Circuit Plus™ Battery Switch
1 Automatic Charging Relay



Can isolate a failed battery.

3 ON-OFF Battery Switches
1 Automatic Charging Relay

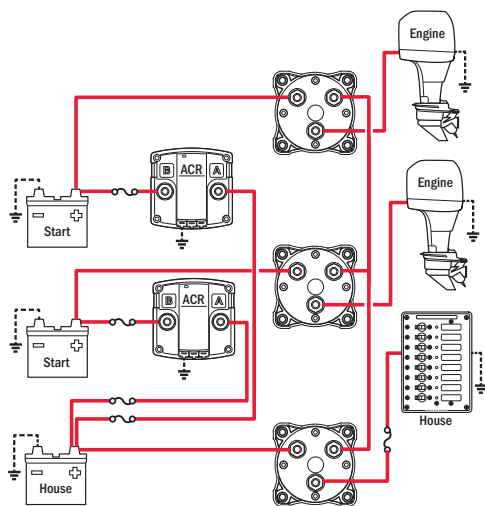


3 Battery - 2 Engine

Can isolate any battery source from any batteries.

3 Selector Battery Switches

2 Automatic Charging Relays



Normal - Set all switches to position 1

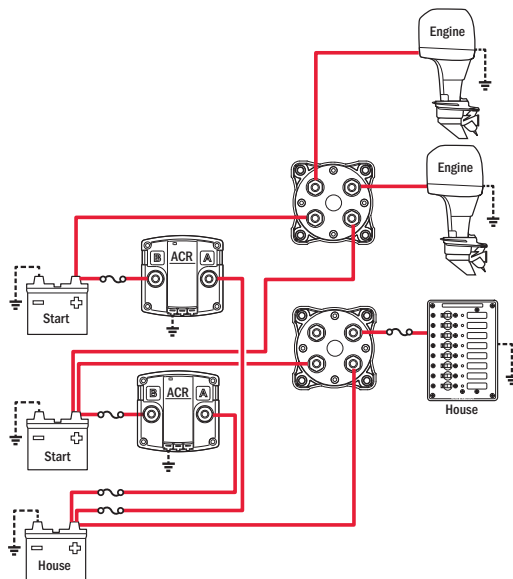
Parallel - Set all switches to position 1+2

Isolate - Set Load switch to Position 2 and
Source Switch to position 1+2

Can parallel batteries for extra starting power.

2 Dual Circuit Plus™ Battery Switches

2 Automatic Charging Relays



LEGEND

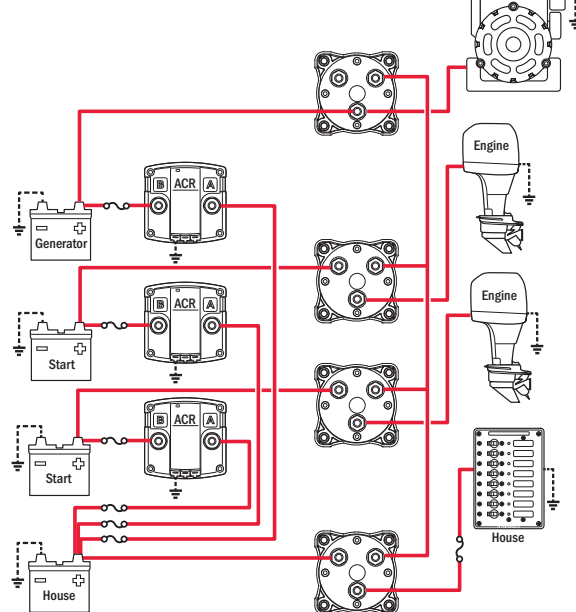
DC Positive ————
DC Ground

4 Battery - 2 Engine - 1 Generator

Can isolate any battery source from any batteries.

4 Selector Battery Switches

3 Automatic Charging Relays



Normal - Set all switches to position 1

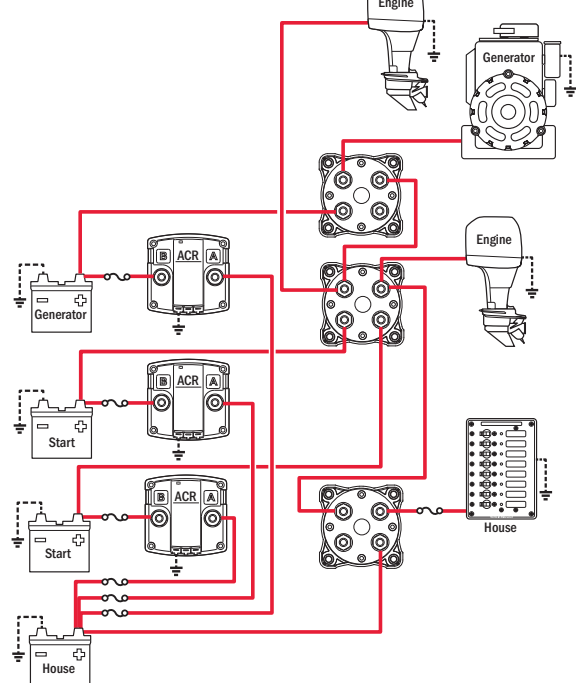
Parallel - Set all switches to position 1+2

Isolate - Set Load switch to Position 2 and
Source Switch to position 1+2

Can parallel batteries for extra starting power.

3 Dual Circuit Plus™ Battery Switches

3 Automatic Charging Relays



DC Main Circuit Protection and Branch Circuit Protection

Purpose

Fuses and circuit breakers are used to protect wire insulation from melting and starting fires in the event of overcurrents or short circuits which cause more amperage to flow in a wire than that wire is rated to carry. It is important to note that, except for those wires that are intended to carry starting currents, every positive wire in the DC Main Power Distribution System must be protected by a fuse or circuit breaker.

Considerations for DC Main Circuit Protection Mounting Placement – distance from power source.

The DC Main circuit protection system uses circuit breakers or fuses to protect the wires of the DC Main distribution system. The American Boat and Yacht Council (ABYC) publishes voluntary standards for the type and placement of the fuse or circuit breaker to be used as a DC Main circuit protection device. Wire intended to carry engine starting currents between the batteries, the switch, and the starter is not required to have main circuit protection devices installed. Maximum mounting placement dimensions for a fuse or circuit breaker are 7" if the conductor is not housed in a sheath or enclosure in addition to the wire insulation, 40" if the conductor is housed in a sheath or enclosure in addition to the wire insulation, and 72" if the conductor is connected directly to the battery and housed in a sheath or enclosure in addition to the wire insulation.











Selecting DC Main Circuit Protection

The principal attribute of a DC Main circuit protection device is its Ampere Interrupt Capacity (AIC) rating. Specifications listed in the ABYC standards determine the AIC a DC Main circuit protection device must have. The required AIC rating is determined by the total CCA of the batteries connected to the circuit. See the tables at right for the required AIC ratings.

Wire selection for DC applications on boats is usually based on voltage drop requirements. However, there is a maximum continuous current that the wire can withstand without overheating. Higher grade marine wires are rated for service up to 105°C (221°F)—the ABYC wire capacity table for 105°C is most frequently quoted. The 105°C table accurately reflects the capacity of single conductors exposed to freely circulating cooling air. However, other factors, such as covering bundles of wire in outer jackets to form a cable, or use of conduits or structural voids to protect wires, can reduce the cooling and reduce the safe capacity of the wire. A more conservative strategy is to use the 105°C wire, but treat it according to the 75°C table above when selecting circuit protection unless the wire is openly exposed for cooling.

See the Blue Sea Systems Circuit Wizard at circuitwizard.blueseasea.com or pages 142-144 for more assistance with wire and circuit protection selection.

ABYC Interrupt Rating Table

Total Connected Battery Cold Cranking Amperes (CCA) *		Ampere Interrupt Capacity	
12 VOLTS AND 24 VOLTS			
The white boxes identify two batteries, of the same size, placed in parallel configuration.		DC MAIN	DC BRANCH
 OR 	650 CCA or Less	1,500 AIC	750 AIC
 +  OR  +  OR 	651–1,100 CCA	3,000 AIC	1,500 AIC
 OR  + 	Over 1,100 CCA	5,000 AIC	2,500 AIC
32 VOLTS			
	1,250 CCA or Less	3,000 AIC	1,500 AIC
	Over 1,250 CCA	5,000 AIC	2,500 AIC

* Battery cold cranking performance rating at -17.8°C (0°F): The discharge load in amps that a battery at -17.8°C (0°F) can deliver for 30 seconds, and maintain a voltage of 1.2 Volts per cell or higher, (e.g. 7.2 Volts for a 12 Volt battery).

The CCA for the battery icons in this chart is an approximation and could be slightly higher or lower. Consult the battery manufacturer's specifications for precise CCA ratings. A battery rated in MCA will have a CCA capacity approximately 80% of MCA

ABYC E-11 requires the use of circuit breakers that can be reused and reset and that they be applied as per the table above. The standard does not strictly require that fuses be applied in the same way, but it is an issue to consider, especially with high amp fuses used to protect panel feeders or inverters. Fuses under 10 Amp rating generally have such a high internal resistance they prevent fault currents from reaching 1000 Amps in 12 Volt circuits.

The apparent contradiction when using these fuses for bilge pumps and other circuits directly off the battery is less of an issue than it might seem. If a fuse blows, and the case appears to be cracked or metal has been ejected, the fuse holder should be replaced.

ABYC Ampacity Rating Table at 30°C †

WIRE SIZE		TEMPERATURE RATING OF CONDUCTOR INSULATION												REFERENCE DATA		
Standard AWG	Metric mm²	75°C Eng Rm	90°C Eng Rm	105°C Eng Rm	75°C Eng Rm	90°C Eng Rm	105°C Eng Rm	75°C Eng Rm	90°C Eng Rm	105°C Eng Rm	75°C Eng Rm	90°C Eng Rm	105°C Eng Rm	mm dia	Ohms /1000ft	Ohms /1000m
18	0.75	9.5	7	19	15.5	19	16	6.6	5.0	13	11	13	11	0.98	7.29	23.92
	0.82	10	8	20	16	20	17	7	5	14	12	14	12	1.02	6.67	21.88
	1.0	13	10	21	17	21	18	9	7	15	12	15	13	1.13	5.47	17.94
16	1.3	15	11	25	21	25	21	11	8	18	14	18	15	1.29	4.17	13.70
	1.5	16	12	24	20	29	24	11	9	17	14	20	17	1.38	3.65	11.96
14	2.1	20	15	30	25	35	30	14	11	21	17	25	21	1.63	2.63	8.63
	2.5	21	16	34	28	38	32	15	11	23	19	26	22	1.78	2.19	7.18
12	3.3	25	19	40	33	45	38	18	13	28	23	32	27	2.05	1.65	5.42
	4.0	34	25	46	38	51	43	24	18	32	27	35	30	2.26	1.37	4.49
10	5.3	40	30	55	45	60	51	28	21	39	32	42	36	2.59	1.04	3.41
	6.0	53	40	57	47	65	55	37	28	40	33	45	39	2.76	0.91	2.99
8	8.4	65	49	70	57	80	68	46	34	49	40	56	48	3.27	0.65	2.14
	10.0	79	60	84	69	100	85	56	42	59	48	70	60	3.6	0.55	1.79
6	13.3	95	71	100	82	120	102	67	50	70	57	84	71	4.1	0.41	1.35
	16.0	105	79	113	93	134	114	73	55	79	65	94	80	4.5	0.34	1.12
4	21	125	94	135	111	160	136	88	66	95	78	112	95	5.2	0.26	0.85
	25	141	106	150	123	175	148	99	74	105	86	122	104	5.6	0.22	0.72
3	27	145	109	155	127	180	153	102	76	109	89	126	107	5.8	0.21	0.67
	34	170	128	180	148	210	179	119	89	126	103	147	125	6.5	0.16	0.53
2	35	173	130	186	153	217	185	121	91	130	107	152	129	6.7	0.16	0.51
	42	195	146	210	172	245	208	137	102	147	121	172	146	7.3	0.13	0.42
1	50	220	165	235	193	273	232	154	116	164	135	191	163	8.0	0.109	0.36
	54	230	173	245	201	285	242	161	121	172	141	200	170	8.3	0.102	0.34
0	68	265	199	285	234	330	281	186	139	200	164	231	196	9.3	0.081	0.27
	70	274	206	292	239	341	289	192	144	204	168	238	203	9.4	0.078	0.26
000	85	310	233	330	271	385	327	217	163	231	189	270	229	10.4	0.064	0.21
	95	334	251	357	293	413	351	234	175	250	205	289	246	11.0	0.058	0.19
0000	107	360	270	385	316	445	378	252	189	270	221	312	265	11.7	0.051	0.17
	120	387	290	414	339	478	406	271	203	290	237	335	284	12.4	0.046	0.15
	150	445	333	476	390	550	467	311	233	333	273	385	327	13.8	0.036	0.12

Data based on E-11 Table VI-A
(single conductors in free air)

Data based on E-11 Table VI-B
(Up to three conductors in a sheath, conduit or bundle)

SAE conductors are smaller than equivalent AWG by 5% to 12% with current capacity typically less by 7%. ISO Ratings for metric wire are slightly less than these values derived from ABYC VI-A ratings.

- For bundles of 4 to 6 conductors multiply by 0.857
- For bundles of 7 to 24 conductors multiply by 0.714
- For bundles of 25 or more, conductors multiply by 0.571

Wires counted in bundles need not include:

1. Wires carrying intermittent currents no more than rating per VI-A and for less than one minute per mm of diameter, and not repeating more often than a delay of 5X times active duration.
2. Wires carrying load currents at less than 50% of the wire rating per table VI-B.

† Thermally limited amperage capacity

AC Main Power Distribution and Circuit Protection

Purpose

- Provide a path for delivering power from the ship's sources of AC power to the AC branch distribution system
- Provide a path for returning fault currents to ground via the green safety Ground wire
- Provide a means for disconnecting AC power when the boat is not in use or in emergencies
- Provide electrical separation to insure that two sources of AC power are never connected
- Provide circuit protection for neutral and line wires in the AC main system
- Provide ground fault protection
- Provide ELCI overload or leakage fault protection

AC Wire Systems

The three most common AC systems used on boats are shown here. In all cases the ground, sometimes called safety ground to clarify its purpose and differentiate it from the DC ground or negative, is said to be a "normally non-current carrying wire." Its purpose is to provide the lowest resistance path for AC currents that have strayed from their proper containment in the normally current carrying hot and neutral wires. The ground wire is connected to the exterior conductive parts of AC devices that could be touched by a person during normal operation, and it conducts errant AC currents safely to ground rather than passing them through a human body. The ground wire is never passed through a circuit breaker.

120 Volt-60 Hz	120/240 Volt-60 Hz	230 Volt-50 Hz
Hot	Hot 1	Hot
Neutral	Hot 2	Neutral
Ground	Neutral	Ground
	Ground	

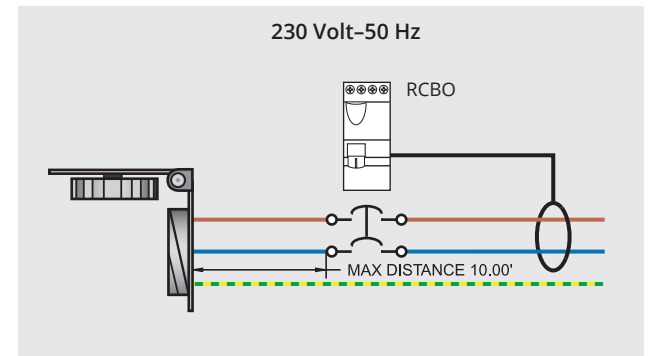
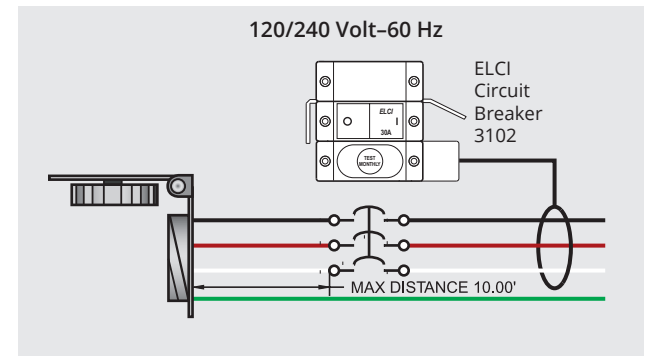
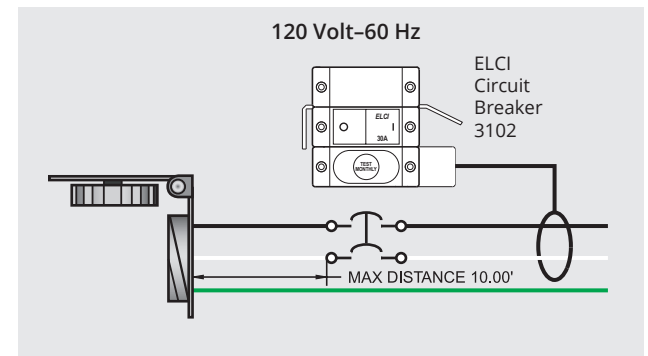
Devices Qualifying as AC Main Circuit Breakers

In order to qualify as an AC main circuit breaker, these characteristics must be present:

1. The circuit breaker must have an Amperage Interrupt Capacity (AIC) meeting the requirements of the following tables.
2. The circuit breaker must be multiple pole, usually 2 or 3.
3. The circuit breaker must be rated for the appropriate AC system voltage in which it will be used.
4. The circuit breaker must be available in amperages appropriate to the design amperage of the system. In the USA, this is generally 30A and 50A, while European systems are generally 16A and 32A.
5. The ELCI shall have a leakage trip mechanism that trips if current exceeding 30mA leaks to ground.

AC Shore Power Source	Main Circuit Breaker	Branch Circuit Breaker
120V - 30A	3,000	3,000
120V - 50A	3,000	3,000
120/240V - 50A	5,000	3,000
240V - 50A	5,000	3,000

Sources of AC power, whether shore power or onboard generators and inverters, should always have a circuit breaker near the power source. This circuit breaker is designated the AC main circuit breaker. The AC main circuit breaker should always have a pole for each of the hot and neutral wires in the circuit assuring that circuit protection functions are not compromised in reverse polarity situations. Beginning in July 2010 ABYC Standards require that an Equipment Leakage Circuit Interrupter (ELCI) with a 30mA leakage trip be installed in shore power applications as the first protective device after the power inlet. ELCIs respond to leakage of electrical current outside of the intended current path, and provide overload and short circuit protection. They serve as the main AC circuit breaker for the system. These devices will open all energized conductors and the neutral when opened manually or tripping on an overload or leakage fault. For a more complete discussion of ELCIs, see page 72.



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1001	93	1232	111	2103	90, 91	2723	85, 91	4215	138
1001100	93	1233	108	2104	89, 91	2730B	88	4216	138
1002	93	1325	129	2105	86, 91	2731B	88	4217	138
1002100	93	1331	136	2107	89, 91	3000	22, 24	4218	138
1003	93	1408	26	2126	86, 91	3001	22, 24	4302	97
1003100	93	1450	102	2127	86, 91	3002	22, 25	4303	97
1007	93	1455	102	2128	86, 91	3003	22, 25	4304	97
1007100	93	1456	102	2129	62, 76	3091	73, 77	4305	97
1010	15	1457	102	2130	62, 76	3092	73, 77	4306	97
1011	15	1459	102	2131	62, 76	3093	73, 77	4307	97
1011200	15	1461	103	2132	62, 76	3100	73, 77	4308	97
1012	15	1463	102	2133	62, 76	3102100	73, 77	4309	97
1013	15	1464	103	2134	62, 76	3103	73, 77	4353	13
1014	15	1472	15	2135	62, 76	3104	73, 77	4374	97
1015	15	1473	130	2136	62, 76	3106100	73, 77	4376	97
1016	14	1474	126	2137	62, 76	3113	74	4378	97
1016200	14	1475	127	2138	62, 76	3116	74	5001	54, 59
1018	14	1477	65	2139	62, 76	3117	74	5005	55, 59
1022B	133	1478	15	2140	62, 76	3118	74	5006	48, 59
1023B	133	1479	136	2141	62, 76	3119	74	5015	48, 59
1024B	133	1479100	136	2142	62, 76	3120	74	5018	48, 59
1026B	133	1480	113	2143	62, 76	3124	75	5021	47, 58
1027B	133	1481	112	2145	79	3125	75	5022	47
1028B	133	1482	112	2146	79	3126	75	5023	49, 59
1029B	133	1483	112	2151	54, 59	3131	68	5024	49
1030B	133	1484	112	2155	79	4001	92	5025	53, 59
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1045	14	1487	113	2203	90, 91	4004	92	5029	53, 59
1050	130	1488	113	2204	90, 91	4005	92	5030	53
1051	130	1489	113	2300	85, 91	4006	92	5031	53
1052	130	1502	110	2301	85, 91	4008	92	5032	51, 59
1053	130	1510	133	2302	85, 91	4009	92	5033	53
1054	130	1518	136	2303	85, 91	4010	92	5034	53
1055	130	1519	129	2304	84, 91	4011	92	5035	50, 59
1056	131	1520	79	2305	84, 91	4012	92	5037	50, 59
1057	131	1521	11	2306	84, 91	4013	92	5045	52, 59
1058	131	1522	79	2307	85, 91	4014	92	5046	52, 59
1070	136	1733	128	2312	85, 91	4015	92	5049	60
1139	18	1800	129	2314	84, 91	4016	92	5050	60
1147	79	1801	129	2315	84, 91	4017	92	5051	60
1148	79	1810	129	2340	84, 91	4018	92	5052	60
1168	110	1811	129	2341B	84	4019B	92	5054	60
1173	119	1820	129	2342B	84	4020B	92	5060	47, 58
1190	110	1829	133	2402	87, 91	4026	137	5061	47, 58
1193	110	1830	125	2404	87, 91	4027	137	5062	47, 58
1200	102	1832	125	2406	87, 91	4028	137	5063	47, 58
1201	104	1833	125	2408	87, 91	4029	137	5064	47, 58
1202	109	1834	125	2410	87, 91	4031	137	5065	47, 58
1203	109	1836	125	2502	87, 91	4100	138	5068	48, 58
1206	108	1837	125	2504	87, 91	4111	80	5101	46
1207	108	1838	125	2506	87, 91	4112	80	5102	46
1208	111	1990	88, 91	2508	87, 91	4113	136	5103	46
1209	111	1991	88, 91	2510	87, 91	4116	80	5104	46
1210	106	1992	88, 91	2512	87, 91	4117	80	5105	46
1211	106	1993	88, 91	2602	87, 91	4119	80	5107	46
1214	108	2001	90, 91	2604	87, 91	4121	138	5108	46
1215	108	2002	90, 91	2606	87, 91	4125	137	5117	47
1216	102	2003	90, 91	2608	87, 91	4126	137	5118	47
1217	103	2010	90, 91	2610	87, 91	4130	137	5119	47
1218	114	2011	90, 91	2701	84, 91	4131	137	5120	47
1219	114	2016	90, 91	2702	84, 91	4135	61	5121	47
1221	104	2016100	90, 91	2708	89	4136	61	5122	47
1222	104	2017	90, 91	2709	84	4137	61	5123	47
1223	103	2017100	90, 91	2710	84	4138	80	5124	47
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1229	106	2020	86, 91	2718	86, 91	4153	80	5128	47
1230	108	2101	90, 91	2719	86, 91	4154	80	5129	47
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Ingress Protection (IP) Ratings Guide



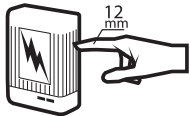



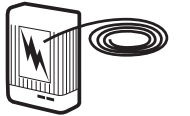


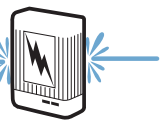




Example:

An IP65 rating can be determined using the adjacent table and example:

- The first number of the rating example, 6, in the gray column means the enclosure is dust tight
- The second number of the rating example, 5, in the blue column means the enclosure is protected against jets of water

The IP rating system was established by the International Electrotechnical Commission (IEC), an organization for international standards and conformity assessment. The IEC collaborates closely with the International Organization for Standardization (ISO). A complete description of the IP ratings and associated tests is found in IEC Publication 529. Although these ratings were initially developed as a way to classify enclosures, they now provide a convenient, practical way to compare levels of sealing. Many electrical products have an Ingress Protection (IP) rating which identifies the environmental factors needing consideration prior to the product's installation.

This is important when deciding when to mount products in a dry and clean environment versus a wet and/or dusty environment. The IP rating indicates the degree of protection provided. The numbers following IP represent levels of sealing and can range from no protection to full protection against dust and water. The table provides a description of the protection at each level.

SOLIDS		WATER	
1	 <p>Protected against a solid object greater than 50 mm such as a hand.</p>	1	 <p>Protected against vertically falling drops of water. Limited ingress permitted.</p>
2	 <p>Protected against a solid object greater than 12 mm such as a finger.</p>	2	 <p>Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress permitted.</p>
3	 <p>Protected against a solid object greater than 2.5 mm such as a screwdriver.</p>	3	 <p>Protected against sprays of water up to 60 degrees from the vertical. Limited ingress permitted for three minutes.</p>
4	 <p>Protected against a solid object greater than 1 mm such as a wire.</p>	4	 <p>Protected against water splashed from all directions. Limited ingress permitted.</p>
5	 <p>Dust Protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.</p>	5	 <p>Protected against jets of water. Limited ingress permitted.</p>
6	 <p>Dust tight. No Ingress of dust. Two to eight hours.</p>	6	 <p>Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.</p>
		7	 <p>Protection against the effects of immersion in water between 15 cm and 1 m for 30 minutes.</p>
		8	 <p>Protection against the effects of immersion in water under pressure for long periods.</p>

Rating Example:





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